

# Manufacturers Record

Reg. U. S. Patent Office



JANUARY, 1936

BALTIMORE, MD.

## CURRENT BUSINESS GAINS

Business has advanced on a broader front since mid-summer and current statistics indicate that many industries are experiencing the best volume of sales since 1930. Especially encouraging is the estimated gain of 25 per cent in the buying of durable goods and the larger volume of new financing of private enterprise and industrial expansion. Automobile sales have been at the highest point in years and retail trade has been the best since 1931.

Construction activity, especially in the Southern States, has greatly increased. This section shows a gain of 100 per cent in residential building and 71 per cent in enlargement and betterment of manufacturing facilities. Total construction contracts let in the South in 1935 were in excess of \$617,000,000, the highest since 1931.

With this advance during 1935, despite uncertainty and adverse political activities and threats of governmental control and competition, there is reason to expect continuation of the upward movement in 1936, provided no more hampering, fear engendering legislation is enacted.

UNIVERSITY

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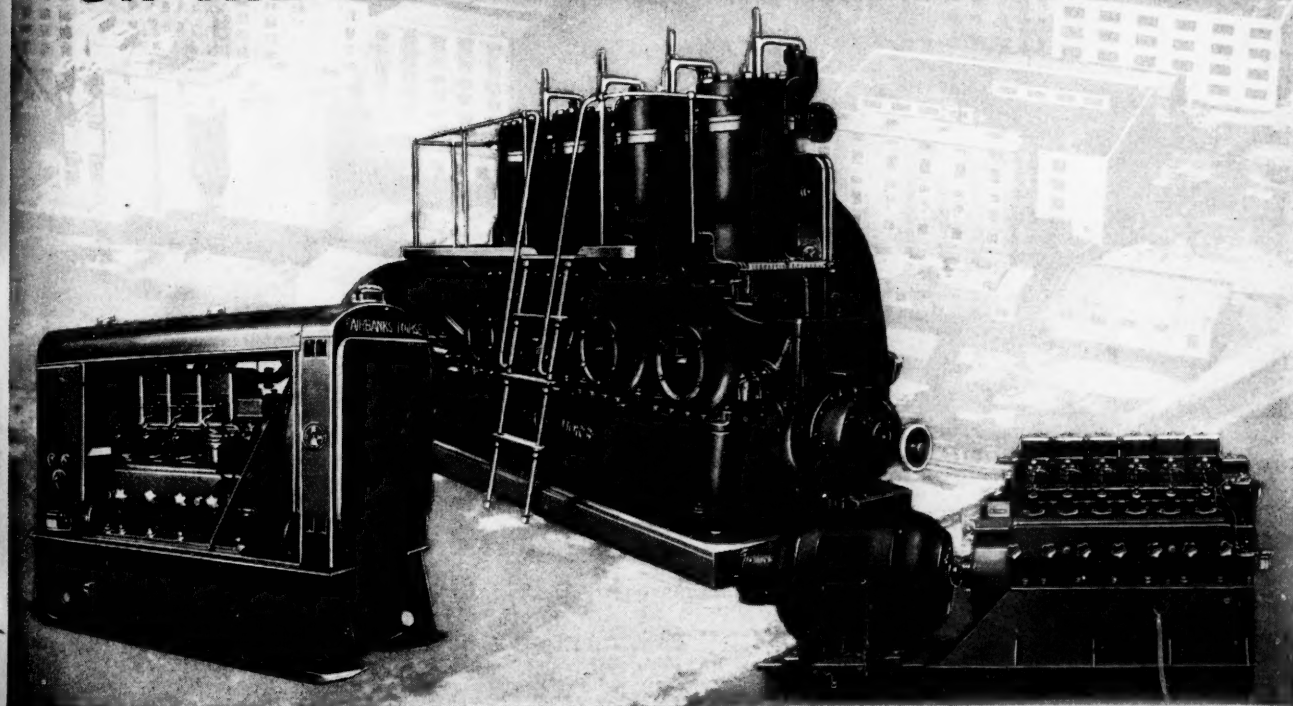
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# A FEW FACTS

## ON THE CHOICE OF A POWER PLANT



**YOU** can pay much—or pay little—for the power you buy. If the source is inefficient . . . if it imposes heavy demand charges and prohibitive rates . . . if it is not flexible to meet both slack and heavy seasons without violent cost fluctuations —*you lose!*

Thousands of F-M Diesels in service have long since proved how well and how cheaply they can provide power for industry. In locations ranging from single store buildings to giant plants, they are consistently lowering costs and providing power "tailor-made" to the needs of every industry which they serve.

How much can F-M Diesels save you? What type is best suited to your needs? What practical advantages do Diesels offer your business? Can Diesels stabilize your costs by eliminating peak and valley unit power penalties? These and your other questions can be answered only by a survey of your specific requirements, which a Fairbanks-Morse engineer will be glad to make on request.

This analysis service is yours without cost or obligation. To get it, write Department D31, Fairbanks, Morse & Co., 900 S. Wabash Ave., Chicago, Ill. 34 Fairbanks-Morse branches throughout the United States are at your service.

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106 YEARS OF PRECISION  
MANUFACTURING

## *Diesel Engines*



POWER, PUMPING AND WEIGHING EQUIPMENT

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JANUARY NINETEEN THIRTY-SIX

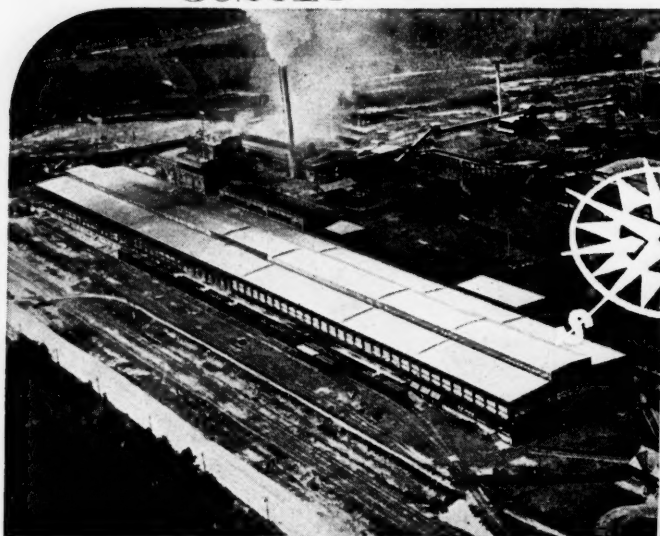
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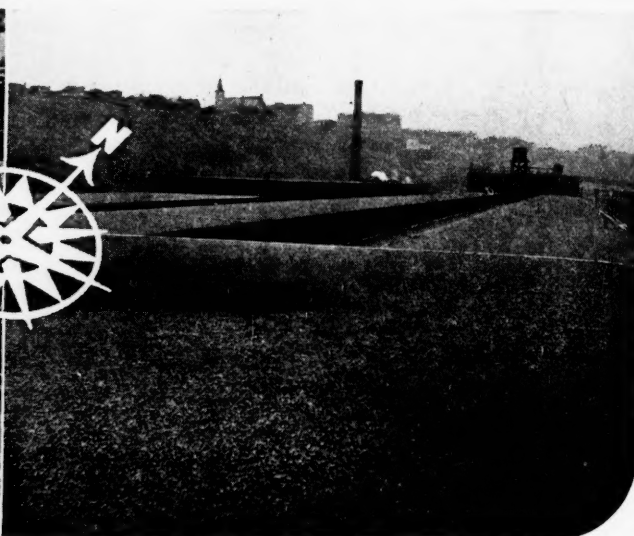
# Two Paper Mills . . Two Climates

## TWO Roofing Specifications

302018



Southern Kraft Corporation mill, Mobile, Ala., protected with 264,000 square feet RU-BER-OLD Asphalt-saturated Rag Felt and Asphalt Built-up Roofing—Gravel Finish



Hoboken, N. J., plant of Hinds & Douch Paper Co., protected with 130,000 square feet RU-BER-OLD Coal Tar Pitch and Felt Built-up Roofing—Gravel Finish

## RU-BER-OLD Built-up Roofs

### Give One Result—SATISFACTION

WHEN you draw plans for a building that requires a flat roof, remember that there is a RU-BER-OLD Built-up Roof Specification to meet the varying conditions of climate, unusual wear, roof design, life of building, proximity to fire hazard, etc.

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FULL DATA WILL BE  
FOUND IN SWEET'S

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When desired, Ruberoid specifications are further protected by a guarantee of both workmanship and material. Such roofs are applied by Approved Roofing Contractors only, and the guarantee is backed by a National Surety Bond.

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**JANUARY  
1936**

Volume CV No. 1

## MANUFACTURERS RECORD

Devoted to the Upbuilding of the  
Nation Through the Development  
of the South and Southwest as the  
Nation's Greatest Material Asset

*Published Monthly*

by the  
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PUBLISHING CO.**

Frank Gould, President

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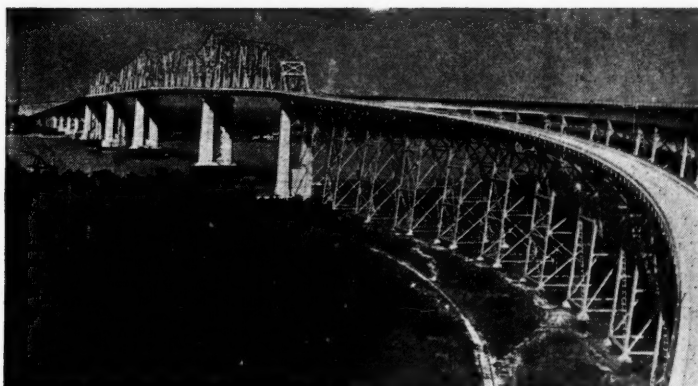
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JANUARY NINETEEN THIRTY-SIX



\$13,000,000 Huey P. Long Bridge Across Mississippi River at New Orleans.

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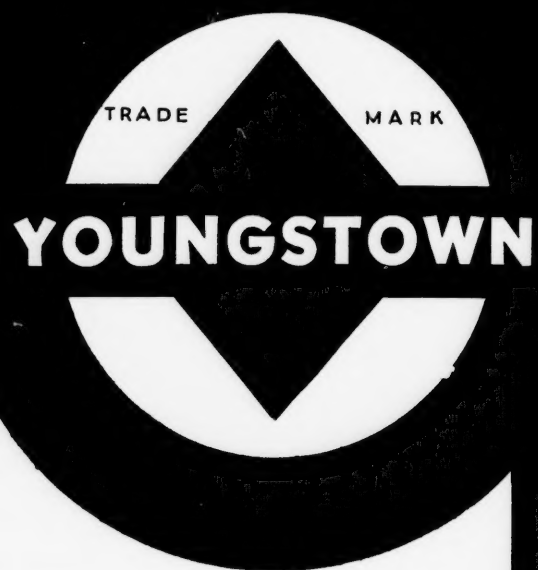
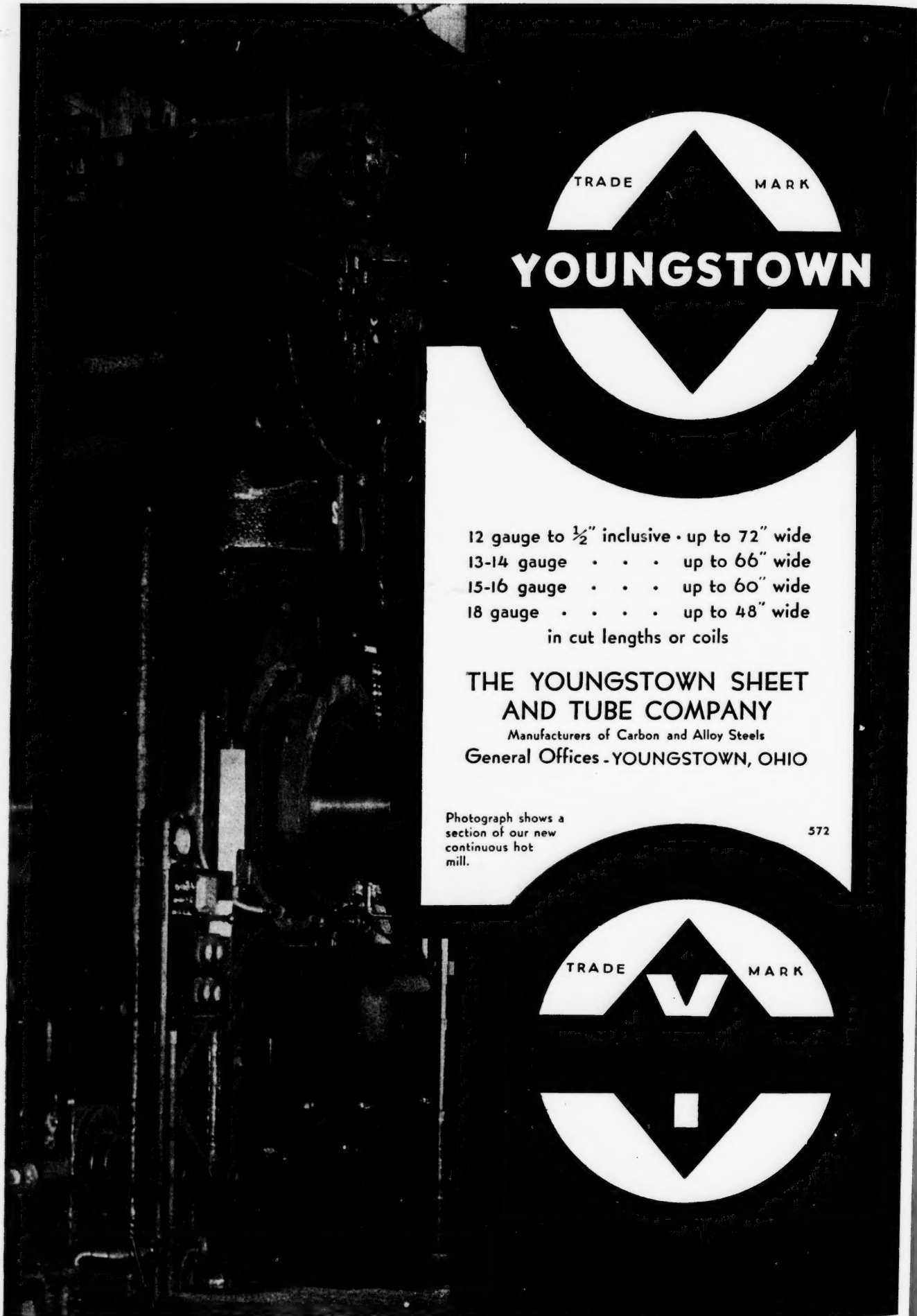
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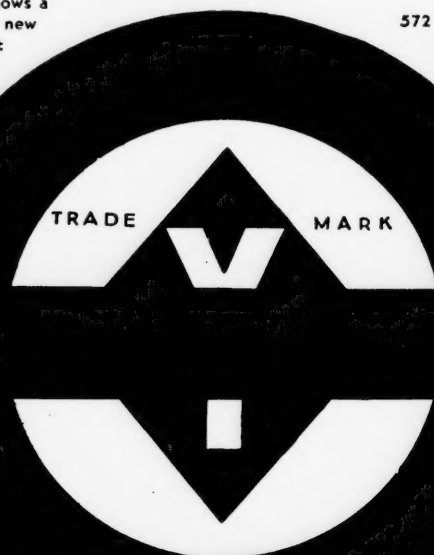
12 gauge to  $\frac{1}{2}$ " inclusive • up to 72" wide  
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**THE YOUNGSTOWN SHEET  
AND TUBE COMPANY**

Manufacturers of Carbon and Alloy Steels  
General Offices - YOUNGSTOWN, OHIO

Photograph shows a  
section of our new  
continuous hot  
mill.

572





**WHEN ROAD DELAYS UPSET SCHEDULES,  
STOLE PROFITS—SENT COSTS SKYWARD...**

**THEY CHANGED TO**

**Firestone**  
**GUM-DIPPED TIRES**



**T**IRE delays were playing havoc with this operator's business. Treads wore down fast — they failed to hold on slippery pavements — even separated at times. It was a tire-killing run. The situation was serious — something had to be done to lower costs and maintain schedules.

So he changed to Firestone Gum-Dipped Tires! And now his trouble is over! For Firestone Tires are built with patented construction features and stand up under most gruelling conditions.

The Gum-Dipped cord body prevents internal friction and heat — chief cause of premature wear and blowouts. The two extra layers of Gum-Dipped cords securely lock the massive non-skid tread and cord body together. These patented features are used in no other tire.

See your nearby Firestone Auto Supply and Service Store or Firestone Tire Dealer. Start reducing your operating costs today.

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of Firestone  
featuring Richard  
Crooks or Nelson  
Eddy — with  
Margaret Speaks,  
Monday evenings  
over Nationwide  
N. B. C. — WEA  
Network*

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**ON-TIME  
SCHEDULES**

**FASTER, MORE  
DEPENDABLE  
SERVICE**

**LOWER  
OPERATING  
COSTS**

# Hydraulic Turbines

•

*Francis and High Speed Runners*

• •

Penstocks—Butterfly Valves—  
Power Operated Rack Rakes  
—Gates and Gate Hoists  
—Electrically Welded Racks

• • •

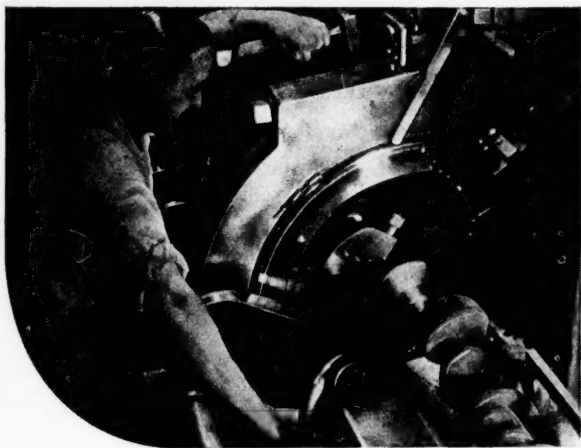
**Newport News Shipbuilding and Dry Dock Co.**  
(*Hydraulic Turbine Division*)

90 Broad Street, New York, N. Y.

Newport News, Virginia



THIS MILLING MACHINE, in a large automobile plant, mills the tops of cylinder blocks on a definite schedule. Gulf lubricants help to keep it in continuous, trouble-free operation.



MACHINES LIKE THIS—which is machining crank shafts for the main bearings—give lower unit cost of operation with Gulf lubricants in service.

## GULF LUBRICANTS Help Maintain Fixed Unit Costs for Operations

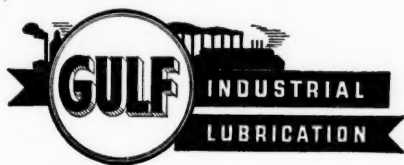
**B**USY machine shops and metal working plants are placing this one big responsibility on lubricants today: *They expect the lubricant to help them maintain continuous operation and fixed unit costs.*

That is why it pays to have a Gulf engineer survey your equipment carefully and recommend the lubricant which is exactly right for each job. The cost of oil and grease for a machine may be a small item, but a delay of only a few minutes—due to faulty lubrication—may play havoc with your operating schedules and your cost sheet.

In metal working plants from Maine to Texas, Gulf engineers are helping plant operators get more efficient service from their equipment. If you are not using Gulf products, give them a trial. They will help you keep unit costs for operations in your plant at a low figure.

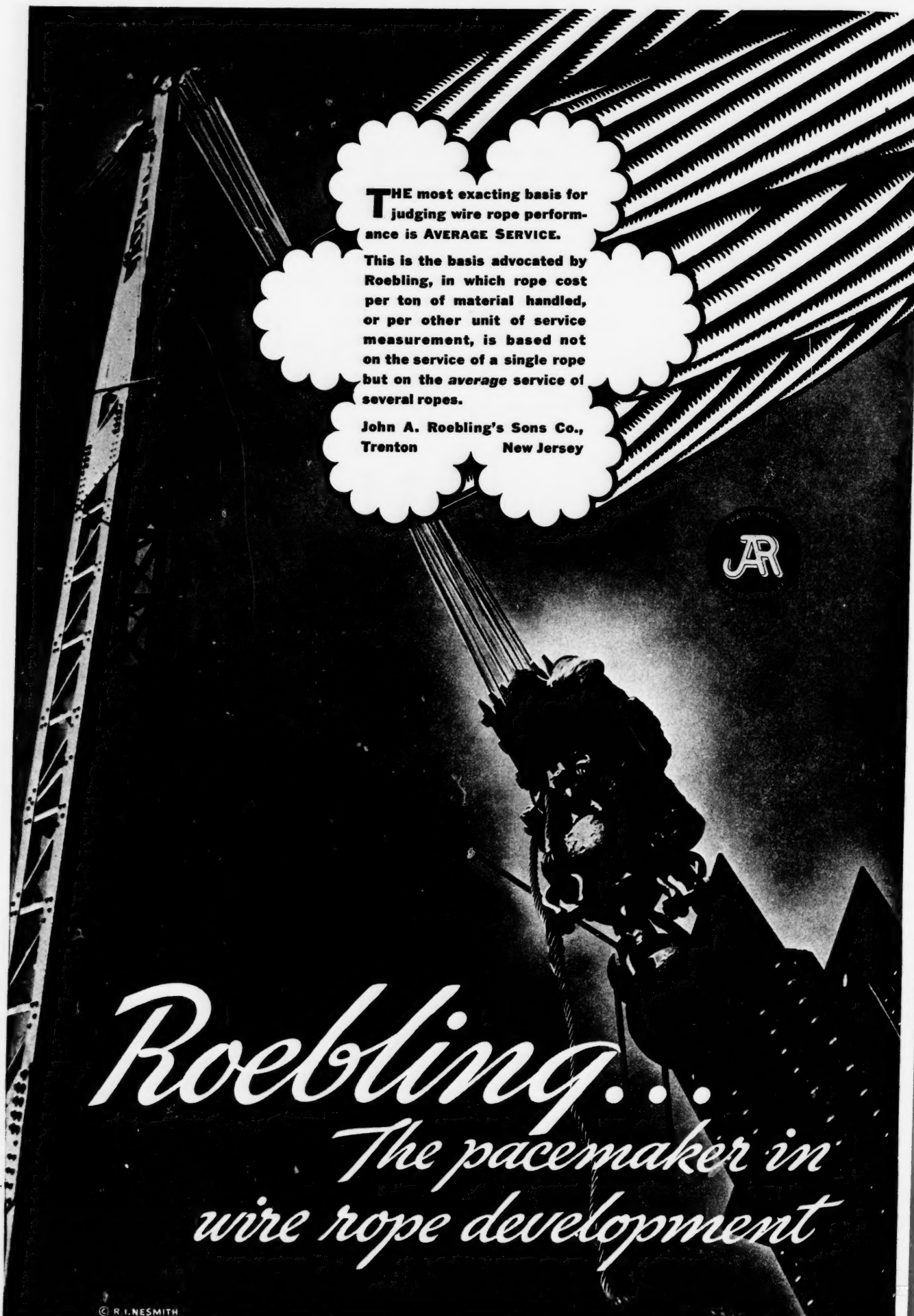
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**T**HE most exacting basis for judging wire rope performance is AVERAGE SERVICE.

This is the basis advocated by Roebling, in which rope cost per ton of material handled, or per other unit of service measurement, is based not on the service of a single rope but on the average service of several ropes.

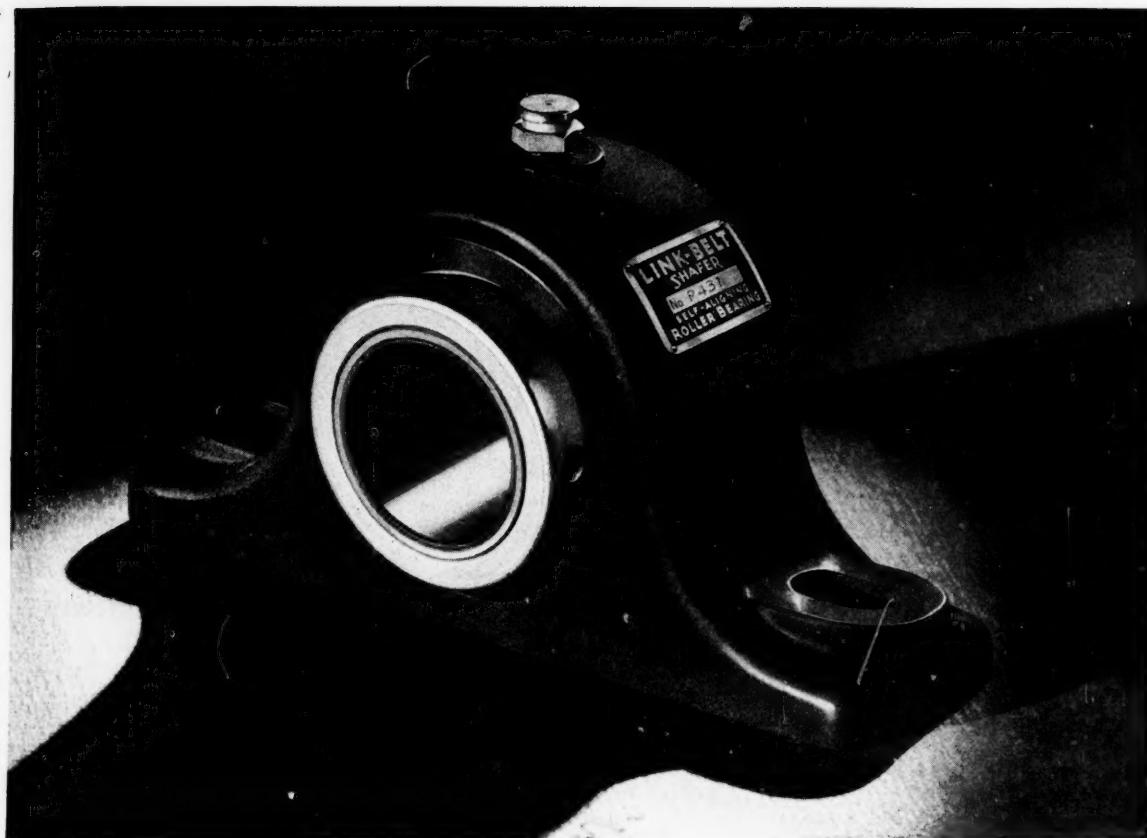
John A. Roebling's Sons Co.,  
Trenton New Jersey



*Roebling...*  
*The pacemaker in*  
*wire rope development*

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# A new Pillow Block by **LINK-BELT**

## **The Ideal Combination**

(Possessed by this New Bearing)

1. Ability to carry
  - (a) radial loads
  - (b) thrust loads
  - (c) radial and thrust loads combined
2. Inherent self-alignment

## **Anti-Friction — Self-Aligning —and Streamlined**

**F**OR lower power consumption, longer service life, better appearance, less lubrication, minimum plant maintenance expense—this is the bearing you should use.

It is known as Link-Belt Series P-400; consists of Shafer self-aligning double-row roller bearings in Link-Belt streamlined mountings; and is available from stock—in all the popular sizes.

Send for Book No. 1494, which includes also anti-friction hangers and take-ups. Address the nearest office.

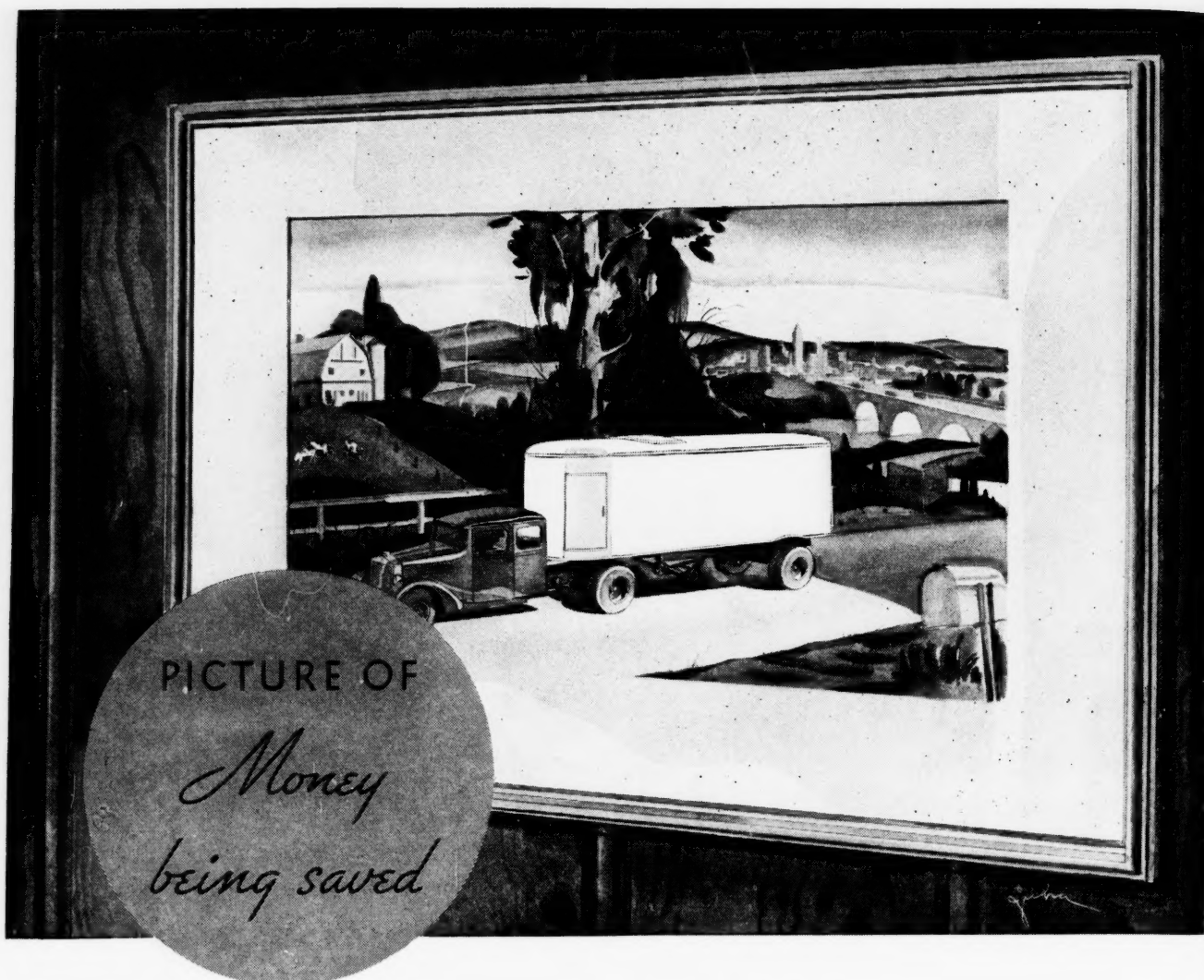
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The Leading Manufacturer of Equipment for Handling Materials and Transmitting Power

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Boston - 1208-9 Statler Bldg.	Detroit - 5938 Linsdale Ave.	Portland, Ore. - 1637 N. W. 14th Ave.
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In Canada—Link-Belt Limited—Toronto Plant, Eastern Ave. & Leslie St.; Montreal, 934 Inspector Street; Vancouver, 550 Beatty St.

5525



THIS TRAILER is built of light, strong Alcoa Aluminum. The builder has saved so much dead weight that the operator can, for example, carry the following extra loads every trip:

- 30 extra quarters of beef, or
- 50 extra cases of beverages, or
- 35 extra sacks of cement, or
- 200 extra vacuum cleaners.

This extra load adds not one pound to gross weight, nor one dollar to operating cost. The extra load is extra profit.

Running empty, the light weight of the trailer saves wear and tear on tires and tubes and tractor, and consumes less gas and oil.


If the service requires an insulated body, still more weight can be saved by insulating with

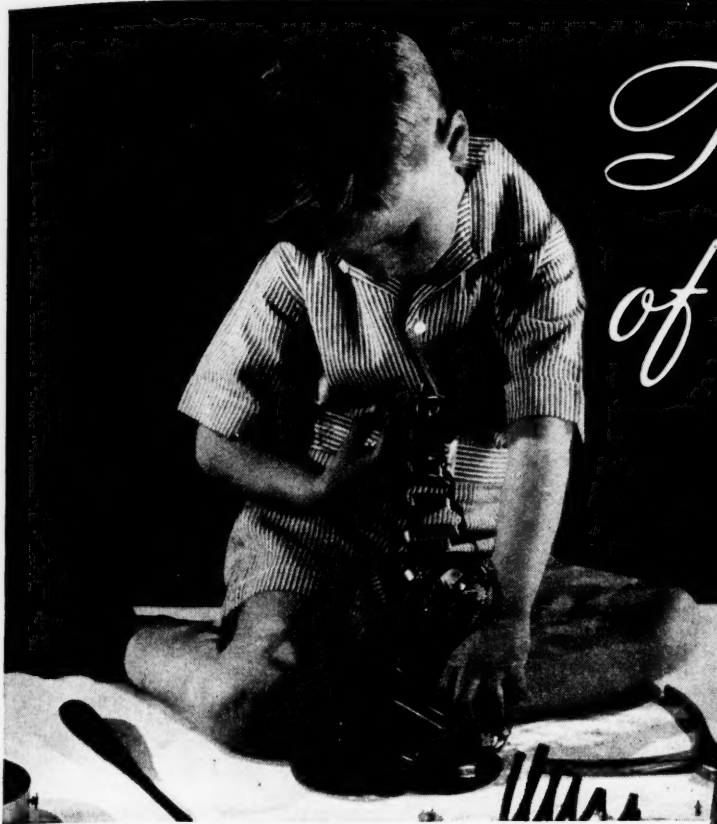
Aluminum Foil, which has only *one-fiftieth* the weight of equivalent cork insulation.

Construction with Alcoa Aluminum takes dead load out of the body and puts pay load inside. That is because Nature made Aluminum light, and research has made it strong, and tough, to stand the gaff.

Alcoa Aluminum eases the burden of excess weight wherever weight impairs efficiency. Anything that moves, or must be moved, will operate better, at lower cost, and with greater convenience, if it is made light with Alcoa Aluminum.

The day of needless weight is done. There is *some* place in your business where making something light, deliberately, will show you a profit. Ask us to help you find it. ALUMINUM COMPANY OF AMERICA, 1809 Gulf Building, Pittsburgh, Pa.

ALCOA  ALUMINUM



# The taming of the screw

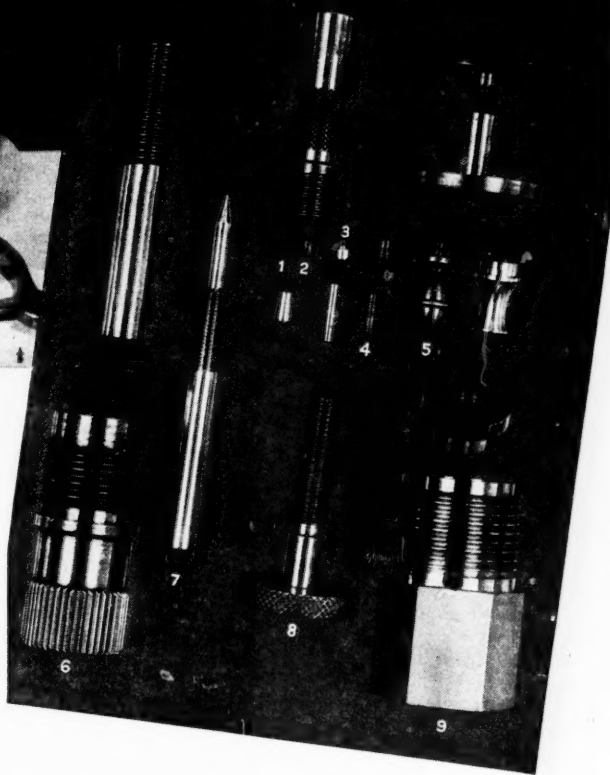
• The life of industry hangs on the thread of a screw. It may be said truthfully that no machine is stronger than its weakest screw thread. The thread's the thing. And the thread depends upon metals, men, and machinery.

Manufacturers are partial to brass as a basic material . . . largely because of its easy working qualities. It yields to cutting, yet is hard and firm enough to possess high tensile strength . . . and is readily finished and plated. Because brass can be accurately and easily processed with precision machinery, manufacturing costs are held to a minimum.

For Brass Rod, certain qualities are essential. The metal must be sound, free from cavities, impurities, inclusions, and it *must* be clean. Revere has mastered every trick in the taming of brass, and offers its Free Cutting Brass Rod for general screw machine production.

Where unusually high strength is essential for screw machine parts or for parts intended for exposure to severe weather conditions, to salt air or to gas fumes, Herculoy Free Cutting Rod is recommended. This patented silicon-bronze alloy has the strength of low and medium carbon steel, and a corrosion-resistance similar to that of pure copper.

To meet the many requirements of industry, Revere has established a Technical Advisory Service . . . through which the facilities of its laboratories and the services of its engineers are offered to any manufacturer with a problem to which copper or one of its alloys may prove the answer. Address our Executive Offices.



1. Optical screw
2. Headless set screw for radio
3. Hinge screw for scissors
4. Headless set screw for player piano
5. Ornamental knobs for fireplace screen
6. Air adjusting screw for carburetor
7. Spray adjusting screw for carburetor
8. Adjusting screw for vacuum cleaner
9. Valve seat for gasoline pump

The remaining screws are representative of the fine precision work necessary if your carburetor and your radio are to respond to delicate adjustments.

# Revere Copper *and* Brass



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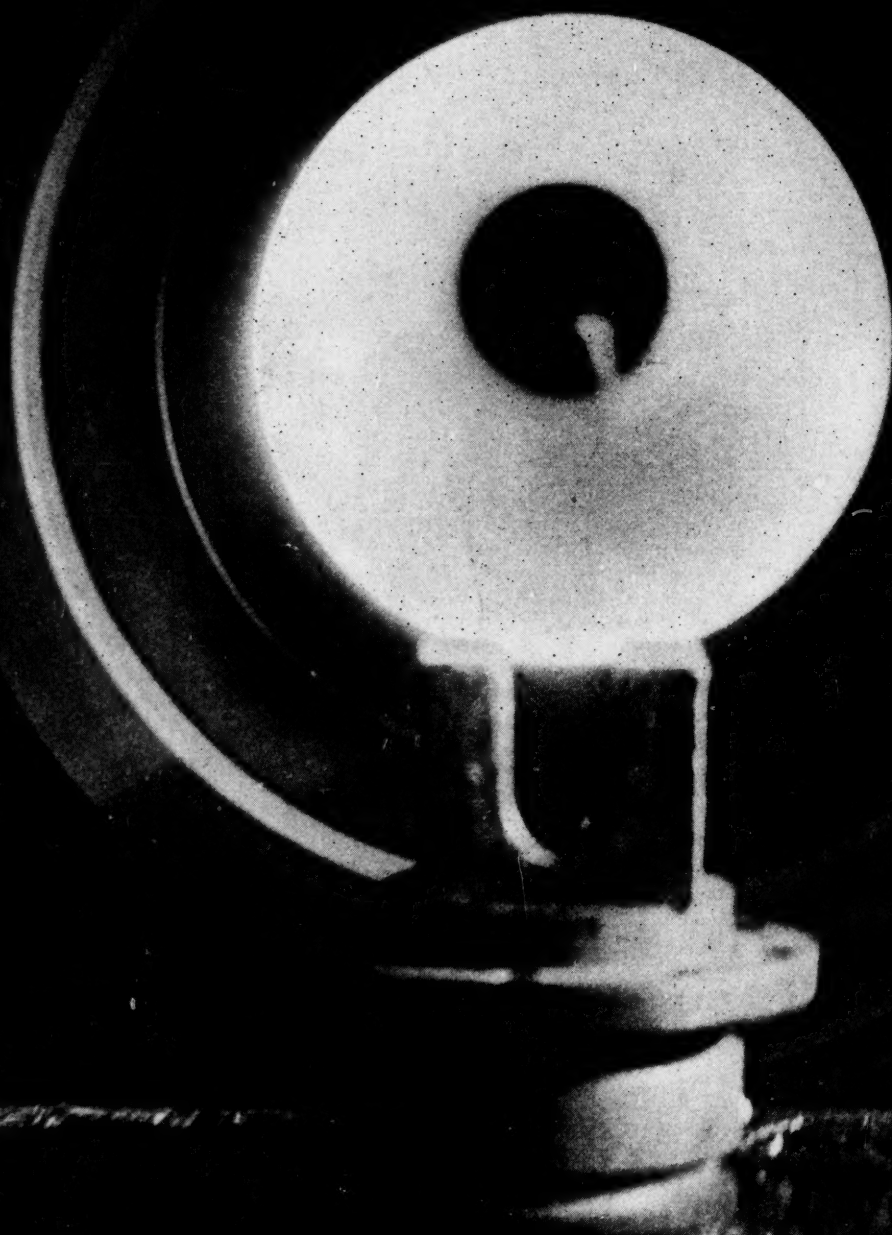
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JANUARY NINETEEN THIRTY-SIX

13



*Cast without chill in a metal mold*



**U.S. SUPER-de LAVAUD PIPE**

**CAST WITHOUT CHILL IN A METAL MOLD**

UNITED STATES PIPE AND FOUNDRY CO., General Office: BURLINGTON, N. J.

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# THE PUBLIC UTILITY HOLDING COMPANY

*A link between the user of electricity  
and the investor*



IT usually takes about seven dollars of invested capital to produce a dollar's sale of electric current. Thus the capital requirements of the electric utility industry are high in relation to what the public pays for current.

Each new customer of a local electric company might buy its stocks and bonds equal in value to seven times his annual bill. But John Doe of Texas, for example, may not be able to put up any such amount.

Electricity will enable him to modernize his farm, his home or his factory; it may thus help him to accumulate some reserves in the future. But meanwhile both he and his community need the help of outside capi-

tal. At the same time, Richard Roe of Michigan has funds to invest. In fact he needs an opportunity to make his funds productive quite as much as John Doe needs electric power to make his work effective.

The utility holding company is the link between the investment requirements of millions of Richard Roes and the need of millions of John Does for electricity.

It has played a significant part in the great improvement in the surroundings and standard of living of Americans which has occurred in a single generation. The holding company has an equally important part to play in promoting a still fuller use of utility services.

## THE COMMONWEALTH & SOUTHERN CORPORATION

*A public utility holding company owning the common stocks of 11 companies operating in 11 states, making up a group operation serving upwards of 1,140,000 electric customers and 250,000 gas customers and uniting the interests of approximately 300,000 stockholders.*

# Burroughs

## TO EMPLOYERS

*who find it necessary to keep  
more detailed information on*

### **PAYROLL and EARNINGS RECORDS** *of individual employees*

While considering ways and means to meet new requirements for information about the earnings and deductions of individual employees, why not profit by Burroughs' experience and recent machine developments?

There are many new styles of Burroughs machines for handling this work. They compute the earnings, prepare individual earnings record, payroll sheet, pay check or pay envelope, all in one operation. They also automatically accumulate such statistics as hours, earnings, various deductions, and net pay for any period. In fact, much of this information can be obtained as a by-product of the regular work of these machines.

Let us show you how we have helped other employers; how your problem can be met with minimum change in equipment, and at the lowest possible accounting cost. There is no charge for this service, no obligation on your part. Telephone the local Burroughs office, or write direct to

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DETROIT, MICHIGAN

ADDING, ACCOUNTING, BILLING AND CALCULATING MACHINES  
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## ARRESTING FIGURES

**S**TARTLING in their significance, and of vital concern to every American who does not want to see his country bankrupt, are the following figures.

There are more than 10,000,000 persons receiving salaries or aid from the Federal government. Included are 796,000 regular Federal employees; 3,400,000 farmers receiving AAA payments; 500,000 in CCC camps; 4,000,000 on public works or on relief, and more than 200,000 paid for administering relief; 860,000 veterans; 109,000 students; 250,000 in the regular army and navy.

Eliminating some duplications and overlapping under the above classifications, the total number receiving money from the Federal government, which comes out of the taxpayers pocket, is about one-fourth of the total number voting in the last presidential election.

More persons are getting money from the Federal government than the number employed in manufacturing, and almost as many as are engaged in agriculture, while the number is nearly double those engaged in trade on their own account in the United States. Added to all this are the hundreds of thousands on the payrolls of states and local governments, for which accurate figures are not obtainable. It is estimated these will amount to several million more.

Of that part of our population gainfully employed, one out of four over 17 years of age is either on government payroll, or is receiving financial aid from government.

Direct and hidden taxes, it is estimated, are consuming nearly one-third of the income of the people. This means that of everyone's earnings the receipts of four months out of the year are paid out in taxes.

Government costs now amount to twice as much as the American people spend for food, and four times as much as they spend for rent and clothing.

To bring these startling figures home more forcibly, because taxes like vice, grow in their insidiousness, few realize that a loaf of bread carries 53 separate taxes, according to the Industrial News Review, and other necessities of life are taxed in proportion.

At the threshold of another year, as the mistakes of the past are realized, the importance of these facts should be driven into the consciousness of every American citizen. To go on in wasteful, haphazard money scattering, that mortgages the country's future and makes for disaster, every Congressman and every servant of the people should be made to understand that with a Federal debt of \$30,500,000,000, and state and city debt of \$20,000,000,000 more, economy must be the watchword from now on. There is no other course if we are to be spared consequences which no one wants to contemplate.

There is a responsibility resting upon everyone who loves his country, whether an owner of property or not, to iterate and reiterate facts of this kind so that the uninformed and the indifferent may comprehend the way the road being built by dreamers is leading. They have tried to magnify a depression into a revolution. They harp upon a distinction between human rights and property rights, when they are synonymous in their relation to well-being. Is their aim the destruction of all incentive to individual accomplishment? It would seem so when the bills passed *and intended to be passed* with their devastating effect upon private initiative are considered.

It is none too soon to denounce folly that if kept up will bring ruin.

Government has been given over to impractical men in whose aims politicians have seen the opportunity and seized it to perpetuate their stay in office regardless of the cost to the country. The preposterousness of it all must be apparent to a sensible people. What are they going to do about it? Is lethargy to prevail?

"We are hurried along a strange road and some of us of an older school are not quite ready to throw aside everything that has developed industries, populated the waste places and brought well-being into isolated communities, in favor of a dream of Government benevolence which is to handle the affairs of citizens and under which, as is being done under pressure of today's confusion, everything is left to Government."—MANUFACTURERS RECORD, *September, 1933.*



## MORE FOREIGN COMPETITION

**W**ITH the advance in general business in the United States it was to be expected we would buy more from abroad. But a disturbing factor is that while we have increased imports most of them are of products that are in direct competition with American producers and at a time when it has been especially necessary to increase employment in this country. There is no economic advantage in sending our money in increasingly larger amounts abroad for competing goods when American producers are trying to sell their products in a domestic market. On the other hand we have increased our exports but little during the past year. It is not that foreign countries cannot buy more American commodities. They have preferred to invest their money in American securities. This is true of their investments on this side and in American-owned plants abroad rather than in American goods.

Let the foreign trade record speak for itself:

10 Months	Exports	Imports
1932 .....	\$1,340,569,000	\$1,121,219,000
1933 .....	1,298,099,000	1,187,499,000
1934 .....	1,767,435,000	1,371,878,000
1935 .....	1,788,911,000	1,692,181,000

We are now importing goods to a value almost equivalent to our exports. Our imports have increased \$320,303,000 or 24 per cent over 1934 while exports gained only \$21,476,000, or 1.2 per cent. The increase in imports during this period is more than 15 times the gain in exports, and we are told by free-trade advocates that we must buy more from abroad in order to sell more. Our imports have steadily gained since 1932, the increase being \$570,000,000 or 50 per cent. Our exports, which declined between 1932 and 1933, show a gain of \$448,000,000 or 33 per cent over four years ago. This increase is figured in our devalued dollars.

That the largest increase in imports is in agricultural commodities at a time when AAA restrictions have curtailed output of American farmers.

### JANUARY-SEPTEMBER IMPORTS COMPARED WITH 1934

Commodity	Value	Increase Per-cent
Cane sugar .....	\$124,726,000	35
Unmanufactured wool .....	19,630,000	45
Corn .....	16,991,000	3,806
Wheat .....	16,758,000	88
Meat products .....	14,737,000	45
Tallow .....	10,878,000	5,450
Molasses .....	10,429,000	87
Coal and products .....	10,363,000	19
Fuel oil .....	10,173,000	70
Cotton wearing apparel .....	9,365,000	36
Tung oil .....	8,351,000	77
Sawed boards and lumber .....	8,163,000	44
Cattle .....	7,686,000	856
Pulpwood .....	6,250,000	9
Py-products from wheat .....	5,775,000	173

In individual imports that are directly competitive with American producers and American workers, great gains were made last year while our exports have actually declined in some major commodity groups such as unmanufactured cotton 16.4 per cent;

cotton cloth 31 per cent; lard 55 per cent, wheat flour 10 per cent; iron and steel from 10 to 29 per cent, and sulphur 26 per cent less, and many of these commodities are among the South's principal products.

We have ceased to export corn and wheat, our total for all grains and preparations amounting to only \$25,000,000.

## SAFEGUARD INSURANCE

**W**ITH 6 per cent of the world's population, the United States has more than twice as much life insurance in force as all the rest of the world. More than \$14,500,000,000 of new life insurance was purchased in this country last year, a gain of 1.5 per cent over 1934, bringing the total in force to approximately \$101,000,000,000.

Sixty-three million individual policy holders are receiving protection and are accumulating savings. As the average policy is for about \$1,600, it is evident the protection and saving is for people of moderate means.

Of total disbursements of approximately \$2,600,000,000 by life insurance companies in 1935, \$1,700,000,000 went to living policy holders and the remaining \$900,000,000 to beneficiaries. For the six-year period beginning with 1930, the life insurance industry disbursed in excess of \$16,000,000,000.

Life insurance as an essential to the welfare of the family, is almost an obligation of good citizenship. Its management and investments are matters of vital interest to everyone. The handling of its trusteeship, fortunately, is a record of integrity.

Forty-nine companies, which represent \$21,350,000,000 of the \$23,200,000,000 assets of all United States life insurance companies, have 47 per cent of their total assets in stocks and bonds, chiefly bonds. Mortgage holdings are about 22.7 per cent of their assets and policy loans are 15.1 per cent. Whatever affects life insurance company investments, directly affects policy holders. They bear the brunt of punitive legislation or discriminatory taxation.

Taxes on life insurance companies, converted into terms of a typical net income tax applicable to corporations, are estimated to be equivalent to 37 per cent, and these taxes are often imposed without the realization that they are direct taxes on the 63,000,000 policy holders. They decrease policy dividends or increase the cost of the insurance. In 1934, the combined taxes would have been sufficient to pay the insurance premium on about \$3,000,000,000 additional insurance. In many states a special kind of tax on insurance is levied—a tax on insurance premiums whether new or renewal. Besides the premium tax, are special fees for licenses, for departmental examinations and for filing annual statements, and Federal income taxes and general property taxes.

All of this and more is of special concern to those who recognize the great importance, in fact, the absolute necessity of safeguarding the investments made for widows and orphans.

Government competition affecting the business of



these great companies is menacing. What is to be the effect upon them of the Social Security Bill is a question still to be answered. Will the imposition of the huge tax on the payrolls of employers cause the stoppage of group insurance?

In the investment field, government competition in the mortgage business affects not only the banks and private lenders, but the insurance companies that place a large share of their funds as loans on property.

## DEVELOPING PRIVATE ENTERPRISE

**T**HE capital goods industry has shown some distinct progress during the latter part of 1935. Buying which has been deferred, and especially since the low point of the depression in 1932, has been yielding in an encouraging way to the necessity of improving plant and equipment facilities to meet modern competition.

This has found expression in a noticeable gain in general construction, with an attendant increased demand for machines and tools, as well as for equipment of all kinds and for steel, cement, brick, lumber and general building materials. This was especially in evidence in the Southern States, where more than \$150,000,000 of new privately financed enterprises for manufacturing or other commercial purposes were either established or extensive expansion programs undertaken.

Contracts let in the South during 1935 for new construction reached a total value of \$617,000,000, this being the greatest total of definite development gotten under way for new engineering and building operations in any one year since 1931. Strictly industrial development increased 71 per cent over 1934, which was the highest total reached in four years. Residential building gained 100 per cent over 1934, representing the largest volume since 1929. The prospects of continued activity in the construction field are especially good in the Southern States, owing to the increased business experienced, which was to a considerable extent stimulated by increased farm income. This is estimated to aggregate more than \$2,730,000,000 for 1935.

Another thing in the South's favor is the mild winter conditions, which are especially favorable to the early prosecution of construction in this section. With the gain in industrial building referred to as having taken place during the past few months, indications are that this should be in even greater volume in the coming months.

Utility companies, even in the face of uncertainties as to the constitutionality of TVA and the Holding Company bill, have been more active in their development enterprises and have planned and undertaken not only the building of new transmission systems with lines to serve new areas, but in the erection of sub-stations and other structures, and the installation of new boilers, engines and turbines, both steam and hydro.

It has been stated by utility executives that with the fear of dissolution and of government competition out of the way, the needs of the business will justify expenditures of many millions that will go a long way toward employing men now out of work.

Manufacturers generally are displaying very definite interest in means to improve operations and reduce cost. This is not only for the purpose of meeting the demands of competition, but to produce better products for less money. This has appealed to a number of the largest industrial concerns. To cite a few, the U. S. Steel Corporation, General Motors, Ford and others have begun improvements aggregating many millions of dollars at their several plants. Only recently the Jones & Laughlin Steel Corporation arranged to finance \$40,000,000 improvements in plant construction largely in the Pittsburgh district. The steel industry is planning to spend \$100,000,000 which indicates one of the largest plant construction periods in history is in sight. A number of these developments have been pending for some time, but have been deferred owing to the uncertain conditions during the depression.

The improvements in great steel plants are significant and a definite answer of steel executives to those who have held the opinion that the industry was overbuilt. It is interesting, also, as an indication of the availability of investors' money for ably managed enterprises in competitive fields. It lends encouragement to other industries which have been hesitant in their plans to expand or improve plant facilities.

Some think that the time is almost at hand when the great amount of capital awaiting investment will be put to work in normal channels of development. Undoubtedly the trend of recent months gives renewed hope for a broader advance in 1936, and certainly as confidence returns it may be expected that the needs of the country, which have been sidetracked for so long, will create a demand enough to keep every factory working overtime for a prolonged period.

With investment money available, there are industrial opportunities in the South in fields which have little or no domestic competition. These, too, with the return of confidence will engage the attention of investors. About half a billion dollars a year are expended abroad for wood pulp and paper, rubber, tung oil, tin, manganese, chromite and other minerals, fertilizer materials, coal tar products and related chemical products and by-products. We have developed since the World War a domestic chemical industry to free us from foreign domination in many commodities. With the progress made and further development of the industries named, and through research, America can be made self-sustained in products essential to our economic welfare. The establishment of these new industries in the South will furnish employment to Americans, use American raw materials and create demand for American-made durable and capital goods. No better way could be found to put to work some of the idle labor and idle money than investment in the development at home of needed products upon which now we are largely dependent on foreign sources of supply.

# BUSINESS VIEWS ON RECOVERY

MYRON C. TAYLOR, CHAIRMAN OF THE UNITED STATES STEEL CORPORATION.

It is evident that the steel industry has experienced a substantial recovery from the low point of the depression, and now seems in a fair way toward moving forward steadily—not rapidly, perhaps, for there are still many uncertainties to be reckoned with.

To assure a continuation of this improvement, we must constantly exercise the utmost caution, diligence and courage.

We must not allow personal or political controversy to interfere with or destroy the gains that have been made.

We must economize; we must shoulder all our individual and collective responsibilities; we must not shirk any of our duties.

We must be willing to rely upon our own resources and not depend upon Government to solve all of our economic ills.

L. E. GEOHEGAN, VICE-PRESIDENT AND GENERAL MANAGER, GULF STATES STEEL COMPANY, BIRMINGHAM, ALA.

This company's sales for the past year have shown some increase over the demand of 1934, the past four months being the best that we have experienced since 1931.

We are to expect that the first quarter of 1936 should maintain at least the demand that we have experienced in the last quarter of 1935, there being a number of projects which are now ready to be started as soon as detailed plans have been approved. These, of course are all government financed.

Apparently there is an increased demand to be expected for wire products and sheets in the agricultural sections to make repairs and improvements.

HERBERT ABRAHAM, PRESIDENT, THE RUBEROID COMPANY, NEW YORK.

Full time operation throughout the coming winter, eliminating the usual seasonal shut-down of approximately two months, has been ordered at the St. Louis, Mo., and South Bound Brook, N. J., plants of The Ruberoid Company, manufacturers of asphalt and asbestos roofing and building products. The order will affect approximately 800 men with monthly wages aggregating more than \$70,000.

The growing general improvement in the building industry, particularly in residential construction, is indicated by the increase this year of 12½ per cent

in the number of squares of prepared roofing shipped by the entire industry. Total shipments of all products by our company alone will show a tonnage increase of about 30 per cent this year, with a concurrent increase of around 42 per cent in the dollar value of our sales.

Reports obtained by salesmen from more than 8,000 distributors located in every section of the country indicate a steady increase in demand during 1936, particularly among home owners desiring to make long delayed repairs or to modernize their properties. In addition, there is definite evidence of a strengthened demand for new construction.

Everything considered, it is our opinion that 1936 will witness steadily improving conditions in residential construction and that 1937 will mark the beginning of building activity comparable to that of pre-depression days.

EDGAR M. QUEENY, PRESIDENT, MONSANTO CHEMICAL COMPANY, ST. LOUIS.

There is ample surface indication that progress has been made during the past year. Commodity indices are up. Farm prices and income have risen substantially. Employment is at a higher level in many industries and the earnings of the employed are greater. Sales reports in general show increases and corporation earnings are more satisfactory. Our reservoirs of credit are the greatest in history. Money is the cheapest in generations. It is, however, difficult to determine how much of this improvement is fundamental and how much superficial. Had it come about as a result of natural causes, there would be abundant confidence that a period of real prosperity is ahead. Such confidence is lacking because it is obvious that much of the improvement has been artificially forced at the price of tremendous public expenditures. The largest national debt in our history stares us in the face. Twin specters of currency inflation and confiscatory taxation refuse to be laid low.

In this situation, I am confident that if sincere and practical efforts are made to curtail governmental expenditures to bring them in line with income, and if a halt is called on expensive and dangerous experimentation and on the political baiting of those groups which contribute most to our economic system, we will be able to advance on the basis of the real progress made thus far. It must be patent to all that 1936 is to be a crucial year.

GERARD SWOPE, PRESIDENT, GENERAL ELECTRIC COMPANY.

The volume of electrical manufacturing business in 1935 was approximately 30 per cent greater than in 1934, which was about the same increase as was shown for 1934 over 1933.

Consumption of electricity in the United States was the greatest in the history of the country, being about 7 per cent more than in 1934 and 3 per cent more than in 1929, the previous peak year. As I said last year, this has been due largely to increased use of electrical appliances in the home, and for the year 1936 we look forward to a continued improvement in business.

Orders for capital goods in the electrical manufacturing industry have not increased to any great extent, because of the difficult position of the public utilities and transportation companies throughout the United States. Practically the only increase in the production of capital goods has been brought about by the modernization of industrial plants.

Successive increases in the use of electricity must eventually mean an increase in the generating capacity of public utilities, which will bring an increase in orders for capital goods to the electrical manufacturing industry.

G. A. EICHORN, B. MIFFLIN HOOD COMPANY, DAISY, TENN., BRANCHES IN 8 SOUTHERN CITIES, NEW YORK AND PHILADELPHIA.

Due to diversification of products, our sales reflect a cross-section of construction activity in the territory we serve, which is primarily the South. Our six plants manufacture clay products ranging from a tile hearth in the smallest residence to an artistic tile roof on the million dollar estate. For the industrial construction field we manufacture chemical brick, and acid tower rings for the oil and chemical trade. For the skyscraper, we manufacture promenade tile for the flat roofs.

Florida was the first section to feel the depression, and is now the first to stage a comeback. This comeback has been in progress for a year and is still gaining momentum. And the spirit of confidence is spreading to the other States, notably Georgia and South Carolina. There is every indication that 1936 will see a real construction boom over the entire South.

Our roofing tile sales for 1935 was behind 1934. This is because sales in 1934 included a great many orders for army camps and other government work, naturally at depression prices, and 1935 sales have been mostly for private work.



And private work means orders at a profit.

Sales of chemical brick, face brick and tower packing show a small increase over 1934. But the real increase in sales in 1935 was in quarry floor tile, which gained 100 per cent over 1934. This was for private work—residences, churches, office buildings and industrial buildings—with practically no government orders at hammered-down prices.

During 1935 we made real progress in developing new products and in improving old ones. Among the new products is a special flashing block that is being distributed through one of the nationally known built-up roofing companies. We have installed de-airing equipment in our plants, which has improved the quality of all our tiles. In 1936 and thereafter we expect a larger increase in roofing tile demand than on any other product. The American public is just now becoming educated to the use of burned clay for roofing purposes, and some day roofing tile will be in universal use in this country as it has been for years in Europe. As an example, a South Carolina cotton mill company last year used 450 squares of shingle tile for roofing its employees' homes and other buildings and in addition five carloads of quarry floor tile. Roofing tile is one material that really has not scratched the surface of its available applications.

## Industrial Recovery in Georgia

By

**J. P. McGrath**

Secretary Treasurer, Georgia Manufacturers' Association, Atlanta

**T**HE relief caused by the adjournment of Congress, the invalidation of NRA, and what the President intimated in his announcement of the "breathing spell," were wonderful stimuli for industrial recovery in Georgia last year. Textiles, furniture, metal trades, and miscellaneous manufacturing have all begun to show a healthy reaction from the dark period through which we had passed.

Freedom of operations proved to be the guaranty of what was necessary for Georgia to again take her place in the van of Southern Industry. Annual reports show a healthy pick-up, with relative improvements in employment and earnings. A number of new industries have come into the State, and indications are that more will follow.

Much of this improvement is attributed to the promise of "less government in business," while a great deal more is directly traceable to the sympathetic cooperation of our State and local

governments, which have followed the platform pledges of our State officials, to pay as they go and keep within their budgets. Economy in State and local governments, and an honest effort to follow the example set, will insure 1936 being a banner year for Georgia. Congress, in its promise to confine its activities to routine legislation, will be a big factor in permitting industry to go forward. This pledge, together with sanguine expectations regarding the action of the courts in social and industrial cases, leads us in the hope of a Happy New Year.

## Best Year Since 1930 in Baltimore Area

By

**H. Findlay French**

Director Industrial Bureau, Baltimore

**T**HE general level of business activity in the Baltimore industrial area during the twelve months of 1935 was good; much better, in fact, than during any year since 1930. The year began on an optimistic note due to the opening of the Chevrolet Motor Company's large new assembly plant.

Another encouraging feature of the year was the reopening of several important heavy industry plants, these resuming production at or near normal. Among these were the Standard Sanitary Manufacturing Company and The Central Foundry Company.

The largest single expansion of the year occurred at the Sparrows Point plant of the Bethlehem Steel Company, where over \$5,000,000 is being invested in the construction of mills for the continuous production of cold rolled strip for tin plate. One of the leading new industries acquired was a distillery plant for Joseph E. Seagram & Sons, Inc., and there were important industrial acquisition in clothing and other lines.

A number of manufacturing concerns materially expanded their plants and facilities, among the best known of these being The Crown Cork & Seal Company and Krebs Pigment & Color Corporation.

While men's clothing and the needle trades lines supplied the major source of new employment during the year, the breweries and distilleries continued to lend material assistance to the steady climb of local business. The housebuilding industry, while still depressed, began to take on signs of new life, there being five times as many permits for dwellings in Baltimore during 1935 as there were in the previous year.

Prospects for the location of additional new industries, and for the continued expansion of existing plants, during 1936 are excellent.

## Texas Industrial Advance Limited Only to Degree of Governmental Interference

By

**Porter A. Whaley**

Executive Vice President and Gen. Mgr.  
Texas State Manufacturers' Association,  
San Antonio

**W**E look for a steady increase in volume of Texas manufactures in 1936, except in one or two industries which are being greatly handicapped by the processing tax, and business men are optimistic. Encouragement at this time for industry in Texas is that a growing number of its people are realizing that the future promise of Texas must largely be along industrial lines and that there must be an advanced policy favorable to industry at the hands of State law makers.

Texas grew in a period of 25 years from a State with an industrial annual output of less than \$100,000,000 to the present annual production of more than \$1,000,000,000. Texas is now one of the 15 leading industrial States of the country. This advance was brought about entirely through the manufacture of Texas raw materials. A good part of the money used for this industrial expansion came from other States although there is a growing appreciation of the need of investment of Texas money in Texas manufacturing establishments.

The leading manufacturing activity in Texas is petroleum refining which represents some of the largest enterprises of their kind in the world. Another leader is the meat packing industry of Texas with an annual output in excess of \$50,000,000 which uses raw materials, as in the case of oil, almost entirely from Texas. Texas can produce practically every type of mineral and agricultural commodity. Therefore, Texas is vitally interested in proper State industrial legislation as well as fair Federal legislation.

Texas industry is suffering from the processing tax and other governmental interferences. If the manufacturers of Texas may be assured that their businesses will not be interfered with by governmental agents from the village precincts to the Capital at Washington (and there are increasing signs that this will be the case) then the time is not far off when Texas will be manufacturing products valued at five to even ten billions of dollars annually.

# COTTON TEXTILE INDUSTRY FACES BETTER PROSPECTS

BY

Thos. H. Webb

President American Cotton Manufacturers  
Association

## Continued Cooperation Essential to Maintain Fundamental Policies of Production, Operation and Marketing.

**T**HE record for the past year for the cotton textile industry is not very glamorous, nor very successful from the profit point of view. However, when one considers the trials and disturbing influences through which it has passed, and when one considers the patience and forbearance and energy expended in trying to steer the industry through these trials and disturbances and with the year ending with no greater fatalities and distress than those existing, the industry may point with pride to its success.

### Disturbing Factors

Uncertainty is perhaps the most disturbing element in industrial life as well as in other forms. That vague possibility that something may happen, or has happened whose influences are unpredictable is a baffling hazard that does not permit the human mind to be able to plan intelligently.

The National Congress, with its long session ending in August, rattled its dangling sword over the heads of all industries, particularly the textile industry, and like the sword of Damocles, each one threatened to fall on the head of industry in some fatal way.

To be specific, production and distribution were greatly disturbed by the question of the constitutionality of the Agricultural Adjustment Act, the Wagner Labor Act, the Social Security Act, the Bankhead Act and many other phases of the recovery program. The constitutionality of these measures was and still is uncertain, hence industry does not know how to arrange its policies. Not only are these measures questioned as to their constitutionality but they are vague and uncertain in their interpretation, and inasmuch as they launch out into new fields of government administration and industrial participation, industry does not know yet

what they mean, hence it is unable to plan intelligently in this maze of mysticism and doubt.

There are not only these laws that have been enacted that stand pointing their menacing fingers at industry but there are other bills such as the Ellenbogen Bill, the O'Mahoney Bill, and other industrial regulatory bills forming in the background that threaten to rise up as further disturbing elements.

### Theoretical vs. Practical Application of Law

There is a great deal of difference between the theoretical application of law and the practical application of law. Business and industry are naturally conservative. They dislike change. In fact, changes in great corporate interests such as obtain in this nation cannot be shifted rapidly as pawns on a chess board. Business is cumbersome and involved and wonderfully interrelated, and when once it gets driven out of its normal channels of functioning, it is with great difficulty that it makes new adjustments, and it is with even greater difficulty that it can make safe adjustment. The cotton textile industry has experienced all of this, both in its production and in its distribution.

The manufacturing processes have been carried on with perhaps less trouble than have the distributing processes, but this is not sounding very optimistic, because no article is of final value until it has been passed out through distributing channels into a profitable consumer market.

All of these disturbing elements have largely been focalized in the distributing end and, to be more specific, have centered around the values that could be secured for these products in the market. These disturbing elements have made

the buyers, both large distributors and ultimate consumers, extremely cautious, hence prices for manufactured commodities in textiles for the major portion of the year have been in many instances far below the cost of production. For that reason those students of financial statements, who gather a great group of the balance sheets of the cotton textile mills, will be surprised to find that perhaps there will be a greater number during the current year that will show losses than for any period during the depression.

### Cooperation Still Necessary

If space would permit a delightful story could be written about the fine cooperative spirit that mills have displayed since the memorable date of May 27th, 1935. When the National Recovery Act was declared unconstitutional, it was rather strongly predicted by the public and by certain harbingers of governmental administration that the cotton textile industry would break down into chaos, that it did not have the strength to maintain wages, hours and other provisions so necessary to its progress, but up until very recently the ranks held firm until the pangs of economic disaster began to become more unendurable because of market conditions, and a few mills, perhaps 10%, have thought that by deviating from those standards they could manufacture a commodity that would successfully meet the market demand at a profit. This has not been successful, and such a policy is fraught with dire disaster, because if continued and extended to a sufficient number within the industry, it will mean the ultimate break down of all cooperative spirit and a return to the jungle principles of business which are unthinkable in this day of enlightenment. It will mean greater demoralization of markets, long periods of curtailment, higher production costs, labor unrest, further legislation, further loss of reserves, loss of capital stock, loss of purchasing power, loss of public approval, loss of respect for each other, further liquidation of mills and bankruptcy.

### Basis for Better Business in 1936

As the year closes, we have satisfactorily arranged our production problems and have kept them in line with demand, the mills in spite of pressure and

(Continued on page 66)



# COTTONSEED CRUSHING INDUSTRY

By

**J. I. Morgan**

President, National Cottonseed Products Association

**C**OTTONSEED and cottonseed products have occupied an unusual position during the past two or three years. During this time, the price of the products milled from the seed has risen approximately three times higher than during the depression years, and the raw material, cottonseed, has likewise risen in proportion. Of the total value of the products milled from cottonseed the oil usually constitutes approximately 55%, the meal 30%, the linters 10%, and the hulls 5%.

Because cottonseed is produced as a joint crop with cotton, the supply is determined by the amount of cotton produced. On the other hand, the demand

is determined largely by the price of other products which compete with cottonseed products. Other factors which influence the price of cottonseed at the time of purchase from the growers, are competition between crushing mills and the anticipation on the part of the crushers as to whether the price of any one or all of the products will go up or go down. Since mills cannot completely hedge their purchases of seed, nor completely hedge the equivalent value in products, these two other factors have caused the crushing industry to be operated on a rather speculative basis.

## The Products Situation

The price of cottonseed oil is determined largely by the price of other edible oils and fats, either produced in our own country or imported from abroad. Today, the price of cottonseed oil is controlled practically by the cost of imported competing oils, such as imported cottonseed oil, tallow, whale oil, palm oil, and coconut oil.

Due largely to the import duties and excise tax now in effect, the cost of the imported oils has been raised, and the price level of our domestic cotton oil, corn oil, soy bean oil, peanut oil, tallow, and hog lard, has likewise been raised.

The price of cottonseed meal is controlled by other competing live stock feeds.

Hulls are used as roughage for cattle and sold locally in competition with hay, etc.

Linters compete with cotton mill waste and also wood pulp for rayon making, etc.

## Mills Seeking New Raw Materials

Due to the reduction in acreage in the cotton crop, the crushing mills have been operating during the past two or three years on a reduced volume of business. Consequently there has been very little profit in the milling operations during this period. In order to broaden their operations, there is a prospect at the present time, that the cotton oil mills may enter the field of soy bean and peanut crushing, which pro-

*(Continued on page 66)*

# FERTILIZER SALES GAIN IN THE SOUTH

By

**Charles J. Brand**

Executive Secretary, The National Fertilizer Association

**R**ECSSION in farm purchasing power in the South which began in 1930 resulted in a drop of more than 50 per cent in the consumption of fertilizer between that year and 1932. Recovery began in 1933 and continued in 1934 and 1935, with consumption in 12 Southern States totaling approximately 3,950,000 tons in the latest year. This represented gains of 11 per cent over 1934 and 51 per cent over the depression low year, 1932, but it was still 29 per cent under the 1930 figure.

All sections of the South have contributed to the improvement which the fertilizer industry has been experiencing. Although declines were registered

in fertilizer sales in Florida and Arkansas in 1935 as compared with the preceding year, substantial gains were reported by the other states and in every case sales in 1935 were larger than in 1932 and 1933.

The Southern farmer is the principal customer of the fertilizer producer. Fertilizer users in 12 Southern States used 3,950,000 tons in 1935 as against about 2,250,000 tons in the remaining 36 states. Cotton lands alone have taken about one-third of the total consumption of fertilizer in the United States in the past.

Consequently the recovery of Southern Agriculture from the serious effects of the 1929-1932 deflation has been of particular interest to the fertilizer industry. The extent of the recovery is indicated by the fact that farm cash income in the South Atlantic States increased 54 per cent from the first nine months of 1932 to the corresponding period of 1935 and the South Central States reported a gain of 45 per cent.

This substantial recovery in purchasing power of the Southern farmers has reacted favorably on fertilizer sales.

Fertilizer users have continued to benefit from the increase in the proportions of the three essential plant foods contained in commercial fertilizers. In the fifteen-year period from 1920 to 1934 the average plant-food content rose from 13.9 per cent to 18.1 per cent. In other words, the farmer who purchased a ton of fertilizer in 1920 got on the average 278 pounds of available plant food; in 1934 he got 362 pounds, or an increase of 30 per cent. This becomes more significant when considered in relation to the 46 per cent decline in the average price per ton paid by consumers between the two years. While complete data for 1935 are not yet available the preliminary evidence indicates that the upward trend in plant food content continued during the year.

The outlook for the industry as it enters the new year is generally a favorable one. The United States Department of Agriculture has forecast that the rise in farm income which began in 1933 will continue in 1936. Since the trend of fertilizer sales is so closely dependent on changes in farm purchasing power this favorable outlook for

*(Continued on page 68)*

# SOUTH BUILDS FOR PERMANENCE

By  
W. D. M. Allan  
Portland Cement Association  
Chicago

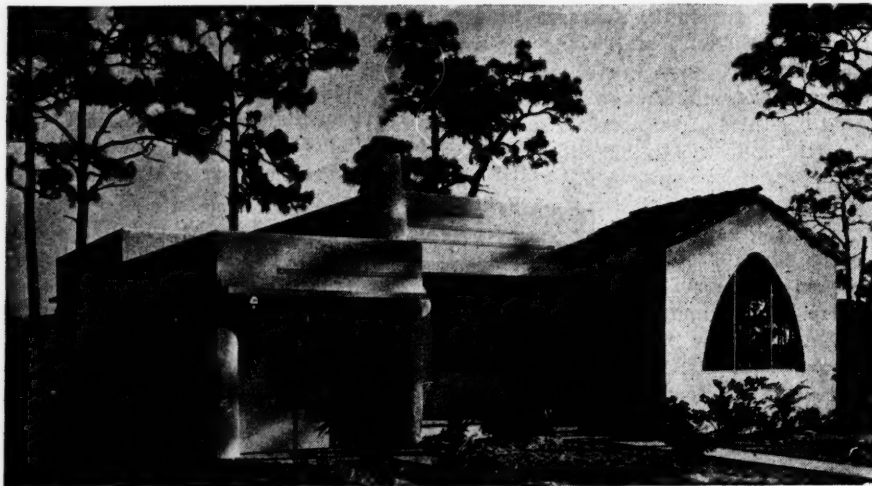
**M**ODERN American genius continues to demonstrate the versatility of portland cement. The South can justly point with pride to its leadership and accomplishment in modern uses of this proved construction material. While the cement industry conducts extensive research and study, it relies to no small degree upon developments that result from the thinking of a multitude of cement users. For cement and ultimately concrete, into which cement is converted, are simply raw materials ready to serve the needs of the engineer, the architect, the contractor, the manufacturer and building owner, the public official, the home owner or the man on the street who thinks in terms of direct service as it influences his efficiency or earnings.

To all of these, cement and concrete are possible means to an end. So the extent to which the cement industry progressed in 1935, as in any year, is a reflection of the recognition accorded it as a useful building material.

While the present annual capacity of cement mills in the United States is more than 270,000,000 barrels, and the

## Concrete Masonry Coated with Portland Cement Stucco

Spreading over Florida from Miami Beach this type of small house construction seems destined to become popular throughout the country



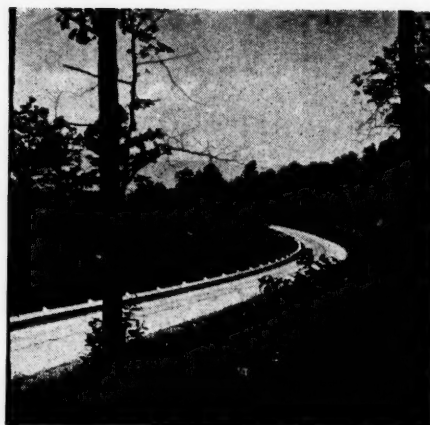
capital investment in plants and equipment is over \$566,000,000, production has been under 30 per cent of capacity in recent years. The total American production for the first nine months of 1935 was 56,066,000 barrels, estimated to be worth \$85,780,000 at the mill.

Although a barrel weighing 376 pounds, is the unit of measurement of cement, the product is no longer shipped in barrels. A 94 pound sack containing exactly one cubic foot of cement is the present standard package.

Portland cement is produced in 11 Southern States. Three of these, Alabama, Tennessee and Texas, ranked among the first 12 cement producing states of the entire country, in cement shipments for the first nine months of 1935. Texas ranked sixth among the states with nine mills shipping 2,778,000 barrels with an estimated mill value of \$4,830,000. Tennessee was tenth in shipments with 2,189,000 barrels valued at \$3,352,000 from six mills, and Alabama ranked eleventh, shipping 1,872,000 barrels valued at \$2,608,000 from five mills.

Other cement producing states of the South are Maryland, Kentucky, Virginia, Georgia, Florida, Louisiana, Oklahoma and Arkansas. Bureau of Mines figures for their cement shipments in the January to September period of 1935 are not available. However, figures for the amount of cement these states used in that period, with the exception of Maryland, were as follows:

Oklahoma .....	1,183,000 barrels
Virginia .....	1,080,000 "
Georgia .....	980,000 "
Kentucky .....	901,000 "
Louisiana .....	813,000 "
Florida .....	679,000 "
Arkansas .....	458,000 "



Along the "Freeway"—Coal Creek to Norris Dam, Tenn.

Here beauty and utility go hand in hand welded by concrete

In addition non-cement producing Southern States used cement in the following quantities:

North Carolina ..	705,000 barrels
Mississippi .....	440,000 "
South Carolina ..	300,000 "

## Large Structures

For years builders have searched for methods that would facilitate and simplify construction and create an effect in keeping with modern design and methods. Two outstanding architectural structures built in the South in 1935 are of this new construction—architectural concrete—the United States Court House, at Columbia, S. C., and the new Atlanta, Ga., jail. With floors, walls and roof all molded into one massive monolith, the clean, true lines and surfaces are pleasing to the eye. A prison barracks of concrete is also under construction in Georgia, and the same material is used in the new Florida State Prison Farm, including walls of concrete, 15 feet high.

Architectural concrete made a thing of beauty of an administration building, built by the State Highway Department in Alabama.

Mississippi officials selected concrete for six jails and a number of interesting new schools.

Texas has built a new engraving plant of concrete and the historic old Spanish Missions of which San Antonio is so proud, are being restored to their original strength and beauty with this new material.

Circumspect peeks into drafting rooms promise architectural concrete construction to follow that will continue the progress now being set for builders of the future.

At the same time, concrete holds its position in the less modern design, since no substitute has arisen to challenge a well earned position. In the form of cast stone, it also serves as the veneer or trim.



In modernization work Atlanta again steps into the light. Too good to abandon, the old jail, built in 1893, was modernized with cast stone to present as fresh and vigorous an appearance as its youthful successor of architectural concrete.

In Texas, at the mammoth new Ft. Sam Houston hospital, cast stone is being used by the carload for trim, while Henderson, Ky., builds a beautiful school of cast stone.

### Housing Developments

In the field of housing, too, the South has made distinct contributions in 1935 to those who want better homes, and has proved the practicability of more recent developments.

Low cost, fire-safe houses were obtained by building walls of concrete masonry and precast joists, used successfully in the building of Norris, Tenn.

Mississippi parents, enthused at the possibility of reducing fire hazards at rural schools, make applications for more than 247 new rural schools of concrete masonry construction.

In Kirkwood, Mo., an enterprising and enthusiastic contractor sets a mark of second in number of installations of precast concrete joists for the entire United States in 1935. In Richmond, Va., a concrete products manufacturer adds to the joists a precast floor slab; sells two residence jobs; is ready to do a real business in his new product in 1936.

Another possibility is the prefabricated house. Again concrete, the raw material, is studied by consulting engineers, and three new houses, approved by the Federal Housing Administration, are cast in sections, put on a truck, hauled to the site and eased into place with hoist and tripod at Laredo, Tex.

Better yet says an inventive builder in San Antonio, is to cast the house in place right at the site, as with a large structure.

At Miami Beach, Fla., a contractor built over 60 houses in 1934. The count now shows 125 concrete houses, all built by one man.

### Highways

"Give us safe highways," is the big cry of today—"Remove the hazards that cause so many accidents."

Chief safety activity has been the building of grade separations at dangerous intersections. Every state has a substantial program, though some are more advanced than others. And, as the public comes to appreciate the importance of this type of structure, what is now looked upon as an emergency program may well become an established yearly program, at least until major hazards have been eliminated.

Also in the interest of safety, a num-

ber of extensive highway sidewalk programs have been inaugurated. Plans call for well over 1000 miles of new concrete sidewalks, many of which will be along heavily traveled highways.

Texas leads all Southern States in miles of roads paved with concrete. Other states which built more miles in 1935 than in 1934, include Georgia, Louisiana, North Carolina, Oklahoma and Virginia.

In South Carolina the first section of a super-highway between Greenville and Spartanburg was started, while Tennessee completed a continuous concrete road from Jackson to Bolivar.

Important future proposed projects for the South are construction of a super-highway between Nashville and Muscle Shoals and completion of Natchez Trace from Nashville to Natchez, Miss.

Outstanding in street improvements, Opelousas, La., launched two paving programs in the year, New Orleans has a WPA program of 600,000 sq. yd. of concrete street paving, and Savannah, Ga. and Louisville, Ky., started major improvements with cement bound macadam.

### Atlanta, Ga.'s. New Jail

This modern building recently built of monolithic concrete was designed by Burge and Stevens, architects; Robert Lose made the structural design—both of Atlanta

### Flood and Erosion Control

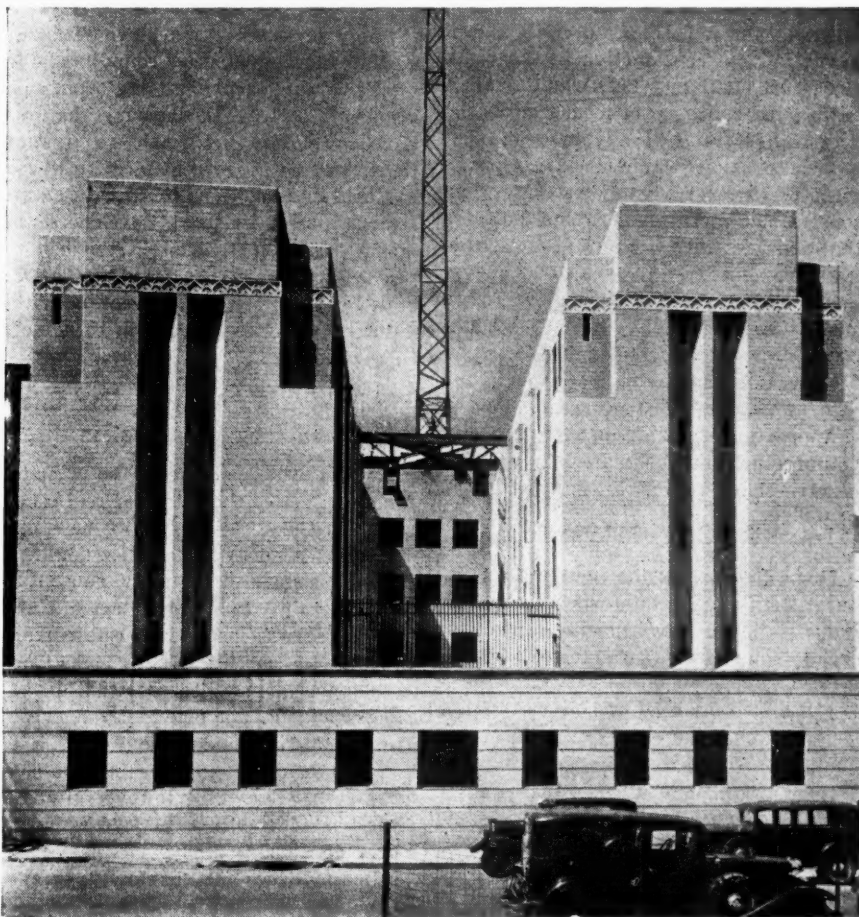
Humming along a Louisiana highway we come to a bridge—the Bonnet Carre Air Line Highway Bridge and the Bonnet Carre Spillway—insurance against a repetition of the 1927 flood disaster. Erected at a cost of more than \$13,000,000 it stands as a sentinel guarding men, women and children and the property of the lower valley from the flood waters of the river. It is built to protect against a flood 25 per cent greater than the 1927 tragedy.

Flood protection work is continuing with engineers laying concrete revetments along the bed of the Mississippi, and perfecting a knuckle type concrete mat to improve results.

In Florida, flood control work of an altogether different kind is going ahead to bring Lake Okeechobee under control. Hurricane gates have been erected and concrete spillways built. Indirectly related to flood control, soil erosion calls for attention.

### Miscellaneous Concrete Construction

There are many miscellaneous ways in which the South with cement, has progressed during a year of reviving spirits. Hundreds of towns and cities looking to sanitation have been building sewers with concrete pipe, and sewage  
(Continued on page 68)





# REAL ESTATE AND CONSTRUCTION

## Its Meaning to the Manufacturer of Materials and Equipment

BY

**Walter W. Rose**

President-elect, National Association of Real Estate Boards\*

**M**ANUFACTURERS undoubtedly have at the present time a more active and immediate interest in the future of real estate than they have ever before had in the history of American industry. It is here that the signal is expected to be given that will switch us over from a recovery economy to a prosperity economy.

I want presently to say what I believe will constitute this signal, the signal that new private construction in volume is on the way. And I want to state the challenge that manufacturers and Realtors in common will have to meet as actual new production opens.

Construction is the country's greatest single employer both of materials and of labor. Private construction in the years 1925, 1926, 1927 and 1928 was engendering a purchasing power measured by the fact that it reached a volume of over \$5,000,000,000 a year. Indeed a Department of Commerce study in 1929, when construction was already falling, indicates that activity properly grouped under this head was totaling \$7,000,000,000 a year at the end of this period, and was then sustaining a pay roll of over \$2,500,000,000 a year. Of direct meaning to manufacturers, it was buying materials at the rate of \$3,900,000,000 per year.

Approximately half of the nation's manufacturies make materials used in construction.

### Lower the Cost of Home Building

Home building is the present focus of our attention. It interests economists, industrialists, government agencies, social commentators and real estate groups alike, as the sector where there is the first clear need of new production generally over the country and in major quantity.

Here arises the challenge. It is a challenge to conquer home building costs.

\*Senator Rose, who takes office on January 15, is head of the Walter W. Rose Investment Co., Realtors, which he established in 1913 at Orlando, Fla.

In practice manufacturers and real estate groups must find the way to meet the challenge, though financing groups, labor groups and other great groups are also directly concerned. How we meet it will affect the timing of "full recovery," and much of its early path. How far we meet it will determine whether we are to have a comparatively narrow market or a market broad beyond precedent for homes, home building materials and new home equipment.

Adjustments and alignments we may well find necessary or advantageous to meet this common challenge will affect, I believe, the whole pattern of our coming industrial life.

Needless to say, what we are able to do to lower the cost of home building and widen home ownership will affect our social pattern, warp and woof.

All this means that those of us who are in the business of real estate are interested more immediately than ever before with manufacturing progress. We are as keenly concerned as any manufacturer with the development of new technologies and new materials that may help to conquer home building costs.

Study of means to achieve desirable single family homes soundly built, modern in efficiency, at a lower cost bracket (lower to consumer) than we have heretofore been able to produce them, will be a central objective of the National Association of Real Estate Boards and of its Land Developers and Home Builders Division in the coming year. I may say very frankly that we hope for some better coordination of the industry of home production to achieve this end.

### Principal Factors Affecting Real Estate and New Construction

Now to examine some of the principal factors affecting the future of real estate and affecting the coming of new construction. We may name these:

1. We have an absolutely new situation and to a considerable degree a new national structure for real estate mortgage finance, particularly for home mortgage finance. Great Federal agencies that are permanent, not emergency agencies, are engaged to make the financing of homes safe, stable, and at minimum cost.
2. We have an absolute reversal of the situation of the last five years as to mortgage money supply.

Almost overnight banks, insurance companies, and other ordinary sources



Walter W. Rose

of capital have begun to seek good real estate mortgage loans. The volume of new mortgage financing as of October 1935, was approximately at 30.3% of the 1926 volume. It must be noted that the present gains of private lending are being made without the outpouring of new millions of HOLC money, as with less than 100,000 applications for loans still pending in December the HOLC announced that lending would be completed in all states before June 13 when by law its lending operations terminate, leaving urban home finance to private lending institutions.

3. We have the lowest interest rates for mortgage loans ever prevalent in this country.

4. We have greatly increased the security of home ownership and so greatly heightened the desirability of home ownership. We have widened our understanding of what constitutes a sound home project. The enforced study of the mortgage of the past few years has done that. Manufacturers no less than financing agencies will profit to familiarize themselves with the detailed "property standards", set up by the Federal Housing Administration to outline what properties are of a type on which it can insure a mortgage. The standards were first enunciated, I am happy to say, in the studies of my own Association. They are gaining now a momentum we yet can only dimly measure.

(Continued on page 64)

# OPPORTUNITIES FOR CHEMICAL INDUSTRIES IN SOUTH

By

Poole Maynard, Ph.D.

Geologist and Industrial Engineer, Atlanta Ga.

**C**HEMISTRY, what it means in the march of progress through an interpretation of the application of raw materials, through chemical processing, for the needs of the human race was illustrated in countless ways at the best and most significant Exposition of the Chemical Industries held at the Grand Central Palace in New York City last month.

Significant, was this chemical exposition, because the products of the chemical industry originate wealth by the transformation of the raw materials of the soil, the forests, the products of the mines along with water, waterpower and sunlight into the manufactured products demanded by man, so necessary for his existence and pleasure.

## Abundant Raw Materials

Why was this great exposition illustrating so many new processes and so many new products of such unusual interest to the South and to the Nation? In the South, as in no other region in the world, we find a great variety and wealth of raw materials of the farm, the mines, the forests, with water and power and sunlight, along with adequate transportation both by rail and water to the consuming population of the Americas. To the Nation, because it illustrated that we can be self productive and secure because of the raw material wealth of the South and because it provides a conservative field for the investment of huge sums of capital now lying latent in the industrial centers of the East and Middle West, with the prospects of greater returns than can be found elsewhere in the nation.

## Light Weight Metals

Industrialists agree that no one can now conceive the tremendous markets already available for the light weight metals of aluminum and magnesium. Industrialists agree that this market will depend on the possibility of producing these metals and the alloys of these metals at a cost low enough to justify their use in the trades. For the manufacture of low cost aluminum, there must

As Revealed by the Recent National Chemical Exposition, the Chemical Industry Introduced 450 New Products During the Depression. With the Development of New Chemical and By-Product Plants in the Southern States, Estimated to Represent Over \$35,000,000 Invested in the Past Two Years, the South Is Rapidly Becoming the Center of Chemical Manufacturing in the United States.

be available, an unlimited tonnage of the raw materials; there must be power of very low cost derived from water or coal or natural gas and nowhere else in the United States is there such a tremendous tonnage of high alumina clays as are found in the Southern States. While these so-called low grade bauxites have not been used commercially in the manufacture of aluminum, that is because the well known existing methods of alumina recovery require a bauxite of low silica content, but it is known that new processes would make possible the utilization of these vast deposits in the South.

No metal is more attractive for the manufacture of light weight alloys than magnesium and the recovery of magnesium from dolomites affords a wide field for experiment.

## Cellulose Resources

Cellulose, the magic raw material, growing wild in the form of the pine forests of the South and made by dame nature from rainfall, sunlight, and air with some small amounts of mineral matter obtained from the soil, has a field of industrial application even beyond the fondest dreams of the great Georgia Chemist, Dr. Charles H. Herty, the "Daddy of the Chemical Exposition."

Cellulose from cotton, and cellulose



Poole Maynard

from wood is grown faster in the South than in any other section of our country, the supply is unlimited, nowhere else can cellulose be produced at such a low cost as in the wild forest land of the South.

What fantastic products are made by processing cellulose. Nitrocellulose for explosives and lacquers; cellulose acetate for photographic films and the so-called synthetic plastics molded to make any number of products; cellulose for the manufacture of rayon from either cotton or wood. Yet the most attractive commercial field for the use of cellulose is the manufacture of ground wood, sulphite and sulphate pulps for the manufacture of newsprint white papers and Kraft from the pine trees of the South.

The hardwood forests of the South, provide a cheap source of pyroligneous acid, from which can be obtained by direct distillation, acetic acid, wood alcohol and acetone and tar, which form the basis of another huge chemical industry.

Roads built of cotton fabric and tar and gravel with asphalt for hard surface indicate a new and wide field for cotton.

Sweet potato starch is being made along with cattle feed by an experimental plant at Laurel, Miss.

Chlorophyll is now being commercially extracted in the South from green leaves for the coloring of foodstuffs and for its vitamin values.

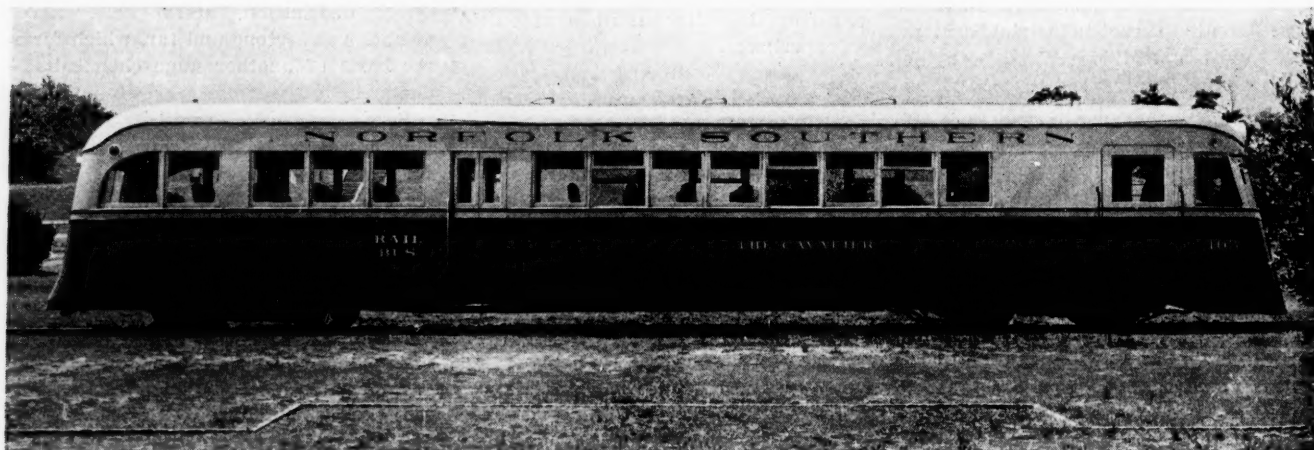
It is estimated that 47,500,000 acres  
(Continued on page 62)

# COORDINATING RAIL AND HIGHWAY SERVICE

**F**ROM experience during recent months with motor-driven rail-buses on its branch lines, The Norfolk Southern Railroad found it profitable to extend the new form of passenger service on a basis calculated to compete with highway transportation mediums. In form, appearance and in comfort the rail-bus equipment is said to provide superior advantages to highway equipment. L. B. Wickersham, General Superintendent of Electric Lines, states that the question of conveniences which obtain in a terminal in the heart of the city was met by having a bus transfer for passengers from the railroad passenger terminal to the company's own bus terminal in the center of Norfolk. By coordinating both the highway service and the rail service with the interchange of tickets and the same rate, the services do not become competitive but rather supplement each other, especially where the schedules are staggered. In this way the rail service can be built up without increasing the highway congestion.

Early in 1934 the executives of The Norfolk Southern Railroad, recognizing the difficulty in retaining its passenger business on its Branch Lines against the more frequent schedules and the more attractive equipment operated by competing agencies on the highway, surveyed the equipment field in search of an operating unit calculated to meet this problem.

Type of Rail-Bus Developed by Norfolk Southern for Branch Line Service



## Branch Line Operation of Rail-Buses by the Norfolk Southern Railroad to Supplement Steam Service Has Reduced Costs, Increased Efficiency and Successfully Met Highway Transportation Competition

The Norfolk Southern Railroad through its subsidiary, the Norfolk Bus Corporation, had derived valuable experience in the operation of automotive equipment on the highway, operating 300 miles of route with full knowledge of the economies of this class of operation. Unable to find on the market equipment calculated to meet its requirements, the Railroad people felt that they could very wisely draw on their automotive experience and the developments on the highway which had been largely instrumental in attracting traffic away from the rails. To this end it was considered that an equipment, seating between 50 and 60 passengers should not exceed a cost of \$26,000 per unit and should provide baggage and express compartments in addition; and capable of operation under existing wage scales and working conditions at a cost approximating 25 cents per mile, these costs representing train costs, interest and depreciation and



Bus Terminal at Norfolk

such costs as would be added to Railroad expenses over existing expenses to provide the service proposed.

As a result of the studies, sketches were made and requirements were submitted to builders with experience in the construction of buses and automotive equipment. As a result, arrangements were made with the American Car and Foundry Company to construct four rail-buses along the lines worked out between the engineers of the Car Company and the officials and mechanical men of the Railroad.

The first two of these cars were delivered in January, 1935, and went into service on the Steam Lines in North Carolina, being placed on new runs comprising added service instead of substituting for existing Steam service. On June 1, 1935, the second two cars were placed in service on the Electric Division of the Norfolk Southern between Norfolk and Virginia Beach, substituting this form of equipment for the electric passenger car operation which had obtained for 20 years previous.

A large amount of advertising was derived by the new operation by reason of the appearance of the streamlined cars and the novel features of the new Rail-bus, convincing the public of the progressiveness of the management and the endeavor to meet changing condi-

(Continued on page 64)



# FEDERAL WATER SERVICE OBTAINS CONTROL OF SOUTHERN NATURAL GAS CO.



**Christopher T. Chenery**  
Chairman Southern Natural Gas Co. and  
President Federal Water Service Corp.

**W**ITH the announcement January 3 of the transfer of all assets of the Southern Natural Gas Corporation to a new company known as the Southern Natural Gas Company, control of the latter company with its 1250-mile gas transmission system passed to Federal Water Service Corporation, by virtue of Federal's ownership of 58% of the new company's class A voting stock. Christopher T. Chenery, President of Federal Water Service, is to be chairman of the new Southern Natural Gas Company, and James H. White, President of the predecessor corporation who served with Hugh M. Morris as a trustee in bankruptcy, is to be elected President.

Conveyance of the properties to the new company terminates the financial difficulties of the Southern Natural Gas Corporation, which went into receivership on September 30, 1931. Subsequently on September 4, 1935, trustees were appointed in bankruptcy under 77-B.

Federal Water Service Corporation obtained its financial interest in the Southern Natural Gas system in 1930 when it advanced money to Southern, for the completion of its construction program. In March, 1932, during the receivership of Southern Natural Gas, Federal exchanged part of its holdings of Southern first mortgage bonds for

**Holds 58% Interest Following Transfer of Southern's Assets to New Company. Reorganization Completed. Present Rate of Business Highest in the Company's History Over Its 1250 Miles of Transmission Lines Serving 40 Cities in Four States.**

debentures of the same company held by outside holders. In the reorganization of Southern under 77-B, Federal will receive approximately 58% of the Class A stock of the new company, representing the controlling interest, in exchange for its claims against the old company.

Gross revenues of the Southern Natural Gas system have increased from \$2,536,810 in 1932, to \$4,033,737 for the year ended November 30, 1935. Net earnings, after all operating expenses, were \$1,360,101 in 1932 and have increased to \$2,279,103, before depreciation or Federal Income Taxes, for year ended November 30, 1935. Present rate of business is the highest in the company's history, with transmission running at near-capacity.

The transfer of properties was ordered by the District Court of the United States for the District of Delaware, following the confirmation by the court on November 1 of a reorganization plan under Section 77-B of the Bankruptcy Act. The plan was sponsored by a committee headed by Henry P. Turnbull, Vice-President of the Central Hanover Bank and Trust Company of New York, and including Christopher T. Chenery, John Y. Robbins, and William von Phul, President of Ford, Bacon and Davis, Inc.

It is expected that the securities in temporary form of the new company will be available for delivery during January at the office of the Central Hanover Bank and Trust Company, New York. Notice will later be published by the Committee regarding the definite date of delivery.



**James H. White**  
President Southern Natural Gas Co.  
Birmingham, Ala.

The company is engaged in the transmission of natural gas through 1,250 miles of main and branch pipeline extending from Louisiana across Mississippi and Alabama into Georgia. It sells primarily to local distributing companies which serve 40 cities and towns with a combined population of approximately 1,100,000 in the states of Mississippi, Alabama and Georgia. Its current daily sales of gas are approximately 100 million cubic feet daily.

Outstanding capitalization of the new company will comprise \$14,800,000 of first mortgage 6% bonds, due 1944, which remained undisturbed in the reorganization; approximately \$5,800,000 of adjustment mortgage bonds; 555,000 shares of Class A stock; and 275,000 shares of Class B stock. Provision has also been made for the issuance of secured notes net in excess of \$1,000,000, to be placed in the company's treasury. The new company is also authorized to issue, if it sees fit, refunding mortgage bonds under the terms and conditions outlined in the refunding mortgage.

**Steam Distribution Equipment.** — The American District Steam Company, North Tonawanda, N. Y., is distributing Catalog No. 35 illustrating and describing ADSCO Steam Distribution Equipment, including engineering, dimensional and price data on expansion joints, meters, steam traps, pipe casing, water heaters, vapor heating specialties, pipe fittings, etc.

# \$617,000,000 CONSTRUCTION TOTAL FOR 1935

WITH \$112,000,000 invested in new construction projects in the Southern States during December, 77 per cent above November and the highest for any month since June, 1930, brought the total for the year to more than \$617,000,000. These building and engineering awards for 1935 are, in the aggregate, the largest reported by the MANUFACTURERS RECORD DAILY CONSTRUCTION BULLETIN for any year since 1931.

The feature of the South's construction revival is the substantial gain in privately financed industrial, business and residential projects. Contracts let for these aggregate \$208,000,000. Industrial plant awards for the year were in excess of \$136,000,000, or 71 per cent above 1934.

Total new structures—public and private building exclusive of industrial plants—amounted to more than \$214,000,000, a gain of 57 per cent over 1934.

General private buildings—hotels, offices, dwellings and stores—amounted to over \$67,000,000, double the volume of work under this classification last year. New residential building amounted to \$37,000,000, or twice the awards for the preceding year.

While road and street work declined

SOUTHERN CONSTRUCTION ACTIVITY		
	December, 1935 Contracts Awarded	12 Months, 1935 Contracts Awarded
<b>General Building</b>		
Apartments and Hotels .....	\$447,000	\$14,615,000
Association and Fraternal .....	.....	516,000
Bank and Office .....	20,000	3,410,000
Churches .....	150,000	1,950,000
Dwellings .....	3,182,000	37,268,000
Stores .....	233,000	9,925,000
	<b>\$4,032,000</b>	<b>\$67,684,000</b>
<b>Public Buildings</b>		
City, County, Government and State .....	\$15,436,000	\$99,762,000
Schools .....	17,750,000	43,217,000
	<b>\$33,186,000</b>	<b>\$142,979,000</b>
<b>Roads, Streets and Paving</b>		
	<b>\$26,951,000</b>	<b>\$178,216,000</b>
<b>Industrial and Engineering Projects</b>		
Drainage, Dredging and Irrigation .....	\$1,314,000	\$21,368,000
Filling Stations, Garages, etc. ....	144,000	4,162,000
Industrial Plants .....	35,937,000	136,569,000
Levees, Revetments, Seawalls, Dikes, etc. ....	167,000	29,827,000
Sewers, Drainage and Waterworks .....	10,294,000	36,520,000
	<b>\$47,856,000</b>	<b>\$228,446,000</b>
<b>Total</b> .....	<b>\$112,025,000</b>	<b>\$617,325,000</b>

from \$191,000,000 to \$178,000,000 and flood control, waterway improvements, sewers, drainage and waterworks contracts were less, public building construction of approximately \$143,000,000 showed a gain of about 44 per cent over 1934. New schools erected were valued at \$43,000,000 or \$12,000,000 more than in the preceding year.

As 1936 opens there is a great volume of new construction in sight, and especially important are the large number and variety of industrial projects to be undertaken in the Southern States in the coming months. Listed herewith are some of the major industrial enterprises in the planned stage, those now under construction and recently completed.

## Typical Industrial Projects of the Year in the South

### PROPOSED

Alabama—State Rural Electrification Authority, Montgomery, approved nine rural electrification projects..	\$1,045,000
Ala., Leeds—Universal Atlas Cement Co., may remodel plant .....	300,000
Fla., Deland—City, municipally-owned electric system....	350,000
Ky., Lebanon—Albert Kalo, install natural gas system....	100,000
Ky., Lexington—Kentucky Independent Packing Co., remodel and expand plant.....	100,000
Ky., Middlesboro—City, municipally-owned power plant..	228,000
La., Eunice—Continental Oil Co., Oklahoma City, construct cracking plant at Eunice, new terminal at Lake Charles, and pipe line from Acadia Parish.....	450,000
La., New Orleans—Johns-Manville Corp., plant to manufacture asphalt and asbestos roofing products.....	750,000
Miss., Brookhaven—Brookhaven Garment Co., garment factory .....	125,000
Miss., Jackson—F. P. Gates, gas line from Jackson to Philadelphia, Miss. ....	855,000
Mo., Marshall—City, municipally-owned power plant....	150,000
Mo., St. Louis—St. Louis & San Francisco Railroad, improvements during 1936 .....	2,000,000
Mo., St. Louis—Carondelet Brewing Co., plant rehabilitation .....	150,000
Mo., St. Louis—Laclede Power & Light Co., improvements and extensions .....	3,500,000
Okla., Henryetta—Pittsburg Plate Glass Co., expansion program .....	200,000
Okla., Oklahoma City—Wilson & Co., Inc., plant improvements .....	250,000
Tenn., Chattanooga—Tennessee Electric Power Co., Construction budget for 1936.....	2,000,000
Tenn., Memphis—City, grain elevator.....	500,000
Tenn., Memphis—Plough, Inc., plant for manufacture of pharmaceuticals .....	350,000

Tex., Baytown—Humble Pipe Line Co., Houston, pipe line from East Texas field to refinery and erection of new pumping stations.....	1,000,000
Tex., Beaumont—Atlantic Refining Co., Philadelphia, Pa., may erect 20,000 bbl. refinery at Atreco.....	.....
Tex., Dallas—Charles A. Zilker, brewery.....	175,000
Tex., Plainview—City, municipally-owned power plant....	420,000
Tex., Wichita Falls—City, power plant and distributing system .....	3,250,000

### UNDER CONSTRUCTION OR CONTRACTS AWARDED

Ala., Mobile—City, cold storage and fruit handling plant; O. M. Gwin Construction Co., New Orleans, Gen. Contr.; Doullut & Ewin, Inc., New Orleans, Contr. for refrigerating equipment .....	\$400,000
Ark., Cullendale—Bagpals, Inc., unit to manufacture cement bags .....	100,000
Ark., Crossett—Crossett Lumber Co., kraft paper plant..	4,000,000
Fla., Miami—City Comsn., waterfront terminal improvements .....	115,000
Fla., Pensacola—Hygeia Coca-Cola Bottling Works, Inc., new plant .....	100,000
Ga., Milledgeville—State, power and light plant; Virginia Engineering Co., Newport News, Gen. Contr.....	247,000
Ga., Savannah—Savannah Electric & Power Co., riverside power plant improvements; Stone & Webster Engineering Corp., Boston, directing operations .....	350,000
Ga., Savannah—Union Bag & Paper Corp., pulp, paper and bag plant; Merritt, Chapman & Scott Corp., New York City, Contr. ....	4,000,000
Ky., Lexington—Kentucky Utilities Co., Inc., power line extensions .....	330,000
Ky., Lexington—Kentucky Utilities Co., transmission and distributing lines .....	233,000
Md., Baltimore—Continental Can Co., plant addition; Austin Co., Cleveland, Ohio, Gen. Contr.....	204,000





New Plant of Chevrolet Motor Co., Charlotte, N. C.  
One of several zone branches established in South in 1935

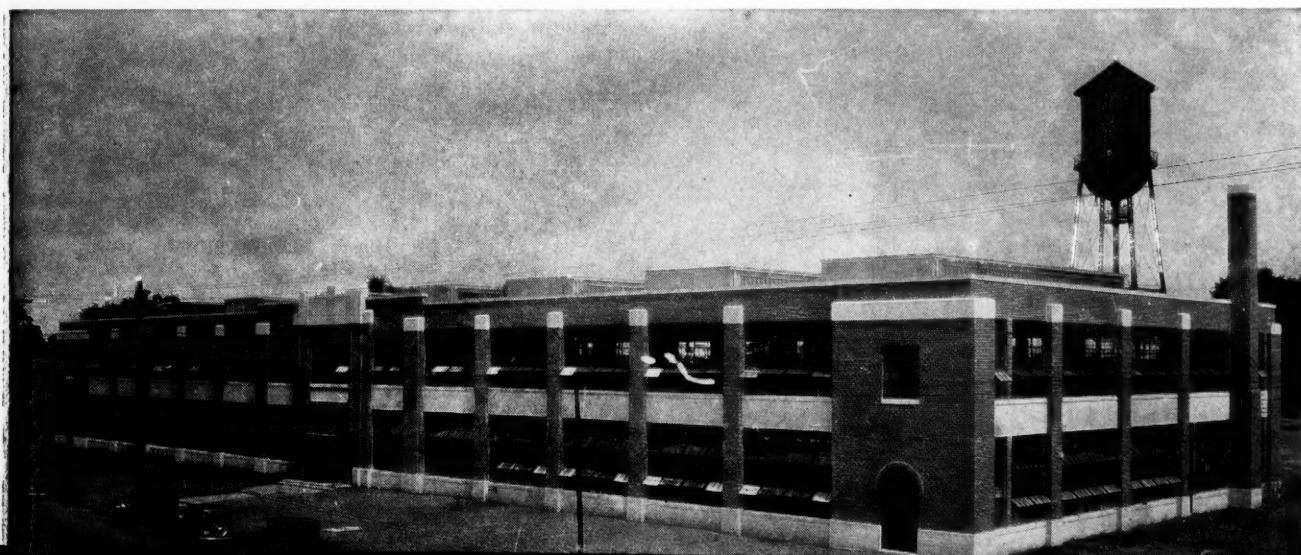
Md., Sparrows Point—Bethlehem Steel Co., constructing continuous cold rolled strip mill.....	5,000,000
Mo., Kansas City—Tarkio Molasses Feed Mill Co., plant addition .....	175,000
Mo., St. Louis—Laclede Power & Light Co., boiler plant .....	900,000
S. C., Columbia—Santee-Cooper Authority, preliminary work on \$37,000,000 hydro-electric power project.....	500,000
Tenn., Chattanooga—United States Pipe & Foundry Co., new plant buildings and remodeling existing structures; United Engineers and Constructors, Inc., Philadelphia, Gen. Contr.....	700,000
Tenn., Knoxville—Tennessee Valley Authority, turbine for Wheeler Dam, 45,000 h. p., Baldwin-Southwark Corp., Philadelphia .....	315,000
Generator for Wheeler Dam, General Electric Co., Schenectady, N. Y. ....	415,000
Tenn., Memphis—Standard Brake Shoe & Foundry Co., foundry improvements .....	250,000
Tenn., Memphis—Wheeling Steel Corp., warehouse; S. Malkin Construction Co., Contr.....	100,000
Tex., Beaumont—Magnolia Petroleum Co., oil refining unit .....	1,000,000
Tex., Dallas—Globe-Union Manufacturing Co., battery plant; Henger Construction Co., Contr.....	100,000
Tex., Houston—Kraft-Phenix Cheese Corp., plant and warehouse; Campbell-Lowrie & Louthier Milch Corp., Chicago, Ill., Contr.....	100,000
Tex., Houston—Clark & Courts, printing plant; Southwestern Construction Co., Contr.....	103,000
Tex., Saginaw—Burris Mill & Elevator Co., flour mill and grain elevator improvements.....	500,000
Tex., Texas City—Republic Oil Refining Co., expansion program; National Supply Construction Corp., Houston, Contr.....	250,000
Tex., Texas City—Pan-American Petroleum & Transport Co., two new units; Foster-Wheeler Corp., and M. W. Kellogg Co., New York City, Contr.....	2,000,000
Va., Hopewell—Allied Chemical & Dye Corp., chlorine plant .....	1,000,000
Va., Martinsville—Fibre Board Container Co., new plant; James Fox & Sons, Richmond, Contr.....	100,000
Va., Norfolk—Norfolk & Western Railway, coal pier.....	1,600,000
Buchanan County extensions .....	3,500,000
W. Va., Charleston—City, incinerator; Frederick Page Contracting Co., Inc., Gen. Contr.....	100,000
W. Va., Logan—American Gas & Electric Co., Appalachian Electric Power Co., Logan plant improvements; General Electric Co. building machinery.....	3,500,000

#### COMPLETED DURING 1935

D. C., Washington—Capital Transit Co., bus terminal; Samuel L. Prescott Co., Inc., Contr.....	\$ 300,000
Fla., Miami—B. F. Goodrich Rubber Co., Akron, Ohio, master service station .....	400,000
Fla., Panama City—Southern Kraft Corp., water system extensions and terminal facilities; Layne-Central Co., Memphis, and Doullut & Ewin, Inc., Contr.....	350,000

Ga., Savannah—Savannah Sugar Refining Corp., power plant improvements .....	150,000
La., New Orleans—Great Southern Wirebound Box Co., Inc., fibre board container plant; Lionel F. Favret, Contr. ....	200,000
Ky., Atherton—Cummins Distillery Corp., plant improvements .....	200,000
Ky., Frankfort—Frankfort Distilleries, Inc., warehouse and general expansion; J. F. Russell & Co., Contr....	1,000,000
La., Shreveport—Frost Lumber Industries, Inc., timber treating plant .....	100,000
Md., Baltimore—Calvert-Maryland Distillery plant extensions .....	1,000,000
Md., Baltimore—Crown, Cork & Seal Co., plant extensions .....	200,000
Md., Baltimore—Southern States Co-operative Mills, feed plant addition and grain storage elevator.....	125,000
Md., Baltimore—Woac Realty Co., Coca Cola plant addition; Cogswell Construction Co., Contr.....	350,000
Md., Curtis Bay—Krebs Pigment & Color Corp., extension of plant following acquisition by DuPonts.....	.....
Mo., Crystal City—Pittsburgh Plate Glass Co., extensions and improvements to plant for production of safety glass here, and establishment of new distributing branches in the South.....	2,000,000
Mo., Kansas City—Liquid Carbonic Co., dry ice; Kaiser-Ducett Co., Kansas City, Mo., Contr.....	350,000
Mo., St. Louis—Chevrolet Motor Co., service parts building, St. Louis, Mo. ....	125,000
Assembly plant extension, Charlotte, N. C.....	100,000
New assembly plant, Baltimore, Md. (Estimated investment) .....	5,000,000
N. C., Charlotte—Hudson Silk Hosiery Co., plant addition and installation of new machines.....	350,000
N. C., Charlotte—Larkwood Silk Hosiery Co., new plant .....	350,000
Tex., Brownsville—Brownsville Navigation District terminal improvements .....	550,000
Tex., Dallas—Magnolia Petroleum Co., reconditioning pipe lines .....	1,000,000
Tex., Dallas—Lone Star Gas Co., pipe line from Long Lake field to Irving .....	2,000,000
Tex., Houston—General American Transportation Co., liquid bulk storage terminals at tidewater.....	500,000
Tex., Houston—Continental Can Co., factory extension (total est. investment) .....	700,000
Tex., Longview—Sabine Valley Gasoline Co., gasoline absorption plant .....	500,000
Tex., Mercedes—Cortez Oil Co., pipe line from Hidalgo County field to new plant at Port Isabel.....	560,000
Tex., Port Isabel—Valley Pipe Line Co., line from Sam Fordyce field to Port Isabel.....	400,000
Va., Glasgow—Blueridge Co., wool fabric mill; John P. Pettyjohn & Co., Contr.....	400,000
W. Va., MeMechen—City Council, municipally-owned power plant .....	105,000
W. Va., Pineville—W. M. Ritter Lumber Co., steel tippie and bridge, etc. ....	200,000

Excelsior-Varsity Underwear Corporation Plant, West Point, Miss.  
Many new textile and garment manufacturing enterprises were established in the South during 1935





# 70 New Industries Added in Commonwealth and Southern Territory

THE diversity of the South's industrial development and the broad geographical distribution of new plants and additions are indicated by the record of activity in the territory served by The Commonwealth & Southern Corporation and its subsidiaries:

Alabama Power Company  
Georgia Power Company  
Gulf Power Company  
Mississippi Power Company  
South Carolina Power Company  
Tennessee Electric Power Co.

During the 12 months ending December 31, 1935, there were 70 new industries located along the lines of these companies. The approximate capital investment is \$3,615,000 and the total number of employees 4,300. The products made by these newly established industries cover a wide range as follows:

Barrels, crates	Lithographing
Boys' clothing	Meat packing
Brewery	Overalls
Broad silk	Pants
Canneries	Ribbon
Cheese	Rock quarry
Clothing	Soft drinks
Cotton reclaiming	Steel culverts
Excelsior	Steel fabrication
Feed mills	Stoves
Fertilizer	Sweaters
Flour mills	Textiles
Fullers earth	Transfer patterns
Garments	Underwear
Granite	Uniforms
Hats	Woodworking
Hosiery	Woolens and yarns
Ice	Worsted

## SOME NEW BRANCH PLANTS IN COMMONWEALTH AND SOUTHERN TERRITORY

Name and Location	Nature of Industry	Approx. Capital Investment	Number of Employees
The Kaynee Company Laurel, Miss.	Boys' clothes	\$250,000	600
Pioneer Silk Mills Hattiesburg, Miss.	Broad silk	150,000	175
Davis Bros. Inc. Valley Head, Ala.	Hosiery	20,000	30
Sewall Hat Company Red Oak, Ga.	Hats	150,000	150
Southern Gold Medal Flour Co. Mobile, Ala.	Flour mill	100,000	20
Macon Textiles, Inc. Macon, Ga.	Worsted	450,000	300
Armour & Co. Woodbury, Tenn.	Cheese	30,000	25
Southern Gold Crown Flour Co. Charleston, S. C.	Flour mill	100,000	20
Classe Ribbon Works Anniston, Ala.	Ribbon mill	50,000	75
Cedartown Textiles, Inc. Cedartown, Ga.	Worsted	450,000	300
Nitrate Agencies Company Charleston, S. C.	Fertilizer plant	75,000	150
Finemore Underwear Corp. Atlanta, Ga.	Underwear	25,000	75
Dayton Veneer & Lumber Mill Americus, Ga.	Baskets and crates	300,000	125
Knickerbocker Manufacturing Co. West Point, Miss.	Underwear	250,000	500

Of the 70 industries, 14 represent branches established by Northern and Eastern manufacturers listed in the accompanying table. As the year closed, negotiations were pending for the establishment of plants by four large Eastern manufacturers, information on which is not as yet available for publication.

One of the outstanding developments of the year has been the movement of worsted mills into the far South, such as the establishment of the branches at Macon and Cedartown, Ga., by the Uxbridge Worsted Co., which has operated for years in New England.

Many industrial expansions have been made in the territory served by The Commonwealth & Southern Corporation, the following illustrating some of the outstanding projects of this character along the lines of one of its subsidiaries, The Tennessee Electric Power Company:

U. S. Tobacco Company, Nashville, \$250,000.

Werthan Bag Corporation, Nashville, \$100,000.

Tennessee Enamel Mfg. Co., Nashville, \$50,000.

American Service Co., Nashville, \$75,000.

Columbian Iron Works, Chattanooga, \$400,000.

Lookout Oil Refining Co., Chattanooga, \$300,000.

Peerless Woolen Mills, Chattanooga, \$200,000.

Scholze Tannery Co., Chattanooga, \$100,000.

Washington Mfg. Co., Columbia, \$100,000.

U. S. Rubber Co., Shelbyville, \$150,000.

## Development is Southwide

The Southwestern Gas and Electric

Company, Shreveport, La., reports 48 new and expanded industries in its territory with a total of 5,166 horsepower, and so the list could be extended for all sections of the South as more than \$136,000,000 were invested in new Southern plants in 1935.

At Savannah, Ga., the Savannah Electric & Power Company reported six new industrial projects, one being the new \$4,000,000 plant of the Union Bag & Paper Co., the other five investing \$100,000 in new plants. Five industries previously located at Savannah are investing \$600,000 in expansion of plants. The Savannah Electric & Power Co., is installing an additional 7500 KW turbine at an estimated cost of \$375,000 and is continuing as fast as possible the construction of lines into rural territory surrounding Savannah.

## Much Work Ahead

Revival of general building and engineering work in the South last year is significant when it is realized that the total of \$617,000,000 of new contracts awarded reached the highest for any year since 1931 and is 63 per cent above the low point of 1933. That improvement is being maintained is evident by the large volume of proposed work to be undertaken in the next few months. Some of the projects, as announced during December, are listed in the following pages:

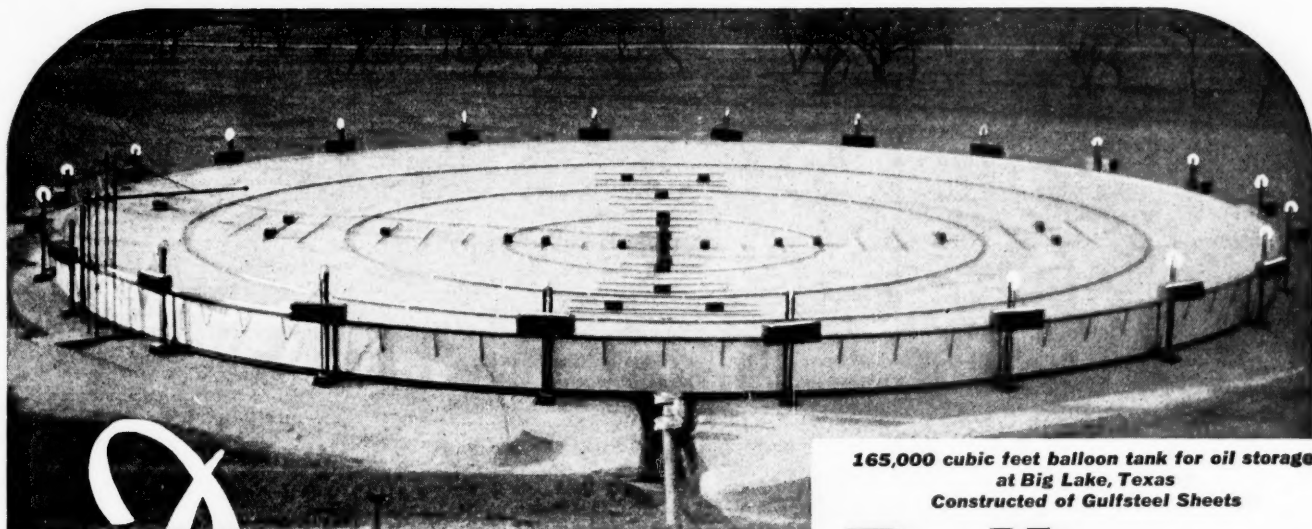
## Proposed Work

Bellaire Enamel Co., Charles Kapner, Vice-Pres., Bellaire, O.; plans establishing plant in the South; sites at Knoxville, Tenn., and elsewhere under consideration.

**Alabama**—WPA will soon begin work on 15 cold storage and warehouse facilities in 15 counties, including, Franklin, Marshall, Madison, Jackson, Elmore, Lee, Macon, Crenshaw, Bibb, Winston, Pickens, Hall, Sumter, Clarke and Choctaw; est. cost of each combined warehouse and cold storage plant, \$20,000, except at Lee and Madison, cost \$21,000 each; plants will be located at county seats of each county except Lee where plant will be erected at Auburn; Ray Crow, deputy administrator for Alabama WPA.

**Ala., Birmingham**—S. H. Kress & Co., main office 114 Fifth Ave., New York, will have plans ready about March 1, for bids on proposed \$750,000 store at Nineteenth St. and Third Ave., N.; will raze building to be vacated by J. Blach & Sons; building will have 4 floors and basement, facing of terra cotta; test drill borings under way; install air conditioning system, etc. 7-3

**Ala., Birmingham**—Gulf Refining Co., Gulf Bldg., Pittsburgh, Pa., and Pure Oil Co., 35 E. Wadser Drive, Chicago, Ill., may build gasoline line from Port Birmingham to Augusta, Ga., line surveyed from Port Birmingham to Jefferson County line; will ship tanks of gasoline by barge line from refinery at Port Arthur, Tex., to Birmingham. (Continued on page 34)



165,000 cubic feet balloon tank for oil storage  
at Big Lake, Texas  
Constructed of Gulfsteel Sheets

# Down in a Balloon!

This Steel Balloon Oil Storage Tank was designed to prevent evaporation losses in oil and gasoline. . . The shell moves up and down vertically about 4 feet, 7 inches, rising to receive the expansion of vapors in the day-time, and returning this expansion to the tanks as its contents contract due to temperature change. . . It is 150 feet in diameter, with a capacity of 165,000 cubic feet, and a height of approximately 15 feet at center when inflated. . . GULFSTEEL SHEETS were used throughout—14-gauge welded sheets for the decks, and 11-gauge welded sheets for the shell. . . When UNIFORMITY, as well as quality, is essential Gulfsteel Sheets are selected.

FABRICATED BY  
**PATTERSON STEEL COMPANY**  
TULSA, OKLAHOMA  
FOR  
**JOHN H. WIGGINS COMPANY**  
DESIGNER AND ERECTOR

**GULF STATES STEEL COMPANY**  
BIRMINGHAM, ALABAMA

**GULFSTEEL**  
*The Steel with* **PERSONALITY**

# SAVE TIME AND EXPENSE

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—O—

Advance news items—definite tips showing where to get business—are given in every issue. Construction, industrial and engineering work both proposed and started which costs \$10,000 or more is systematically covered. It gives the names of all principles connected with the work. The territory embraces the sixteen Southern and Southwestern states from Maryland to Texas.

—O—

It costs but \$10.00 a year—only 4c a day for 250 days, including the Monthly Review Issues.

—O—

Signs point to 1936 as a big construction year. Much of the planned work of the last four or five years will reach the "contract let" stage. Equipment, material and services will be required.

—O—

News items such as appear in adjoining columns are examples of what you can expect in increasing number and variety in the Daily Construction Bulletin during these winter months and the coming year.

—O—

To get the jump on your competitors for Southern Business subscribe for the Daily Construction Bulletin.

Sample copies will be gladly sent upon request.

**MANUFACTURERS RECORD  
DAILY CONSTRUCTION BULLETIN  
BALTIMORE, MD.**

## Proposed Work

(Continued from page 32)

**Ala., Birmingham**—Swann & Co., being organized with Theodore Swann, Pres., Birmingham Bldg., has started construction of laboratory and chemical unit at Thirty-Second St. and Second Ave., S., for manufacture of organic chemicals and other chemicals now imported; building will be 2-story and basement; leased 3 units nearby for manufacturing.

**Ala., Birmingham**—City Comsn. instructed J. D. Webb, City Engr. to make surveys, etc. for proposed water works system; allotment of \$2,378,000 approved; est. cost of land, construction of dam in Blount county, reservoir and distribution mains, opening limestone quarry for production of sand and stone, \$5,809,000; water to be taken from Blackburn fork of Warrior River, 8 miles from Oneonta in Blount County; will be carried by 60-in. pipe line to distribution reservoir west of Mt. Pinson and into Birmingham's industrial district by similar pipe line.

**Ala., Gadsden**—Dwight Mfg. Co., manufacturers of sheetings, drills, etc., will erect building, 140x130 ft. for slasher division; main plant to be extended 140 ft.; install additional cloth manufacturing machinery.

**Ark., Little Rock**—Malco Theatres, Inc., Third and Main St., M. A. Lightman, Pres., Memphis, Tenn., erect office building Main St.; 2-story; 25x130 ft.; glass with chromium trim; cost \$15,000.

**Fla., Callahan**—Everglades Hampers, Inc., M. M. Starling, Pres., Belle Glade, will establish veneer plant on 10 acre site on highway between Callahan and Yulee; install modern machinery and drying equipment; erect 4 buildings of hollow tile, brick and metal; Dr. F. J. Brainerd, Sec., Elizabeth City, N. C. will be in charge of plant operation.

**Fla., Defuniak Springs**—M. N. Fisher and W. I. Stinson will rebuild burned Fisher-Stinson building.

**Fla., Goulds**—Frederick Peters erect packing plant; 1- and 2-story; 60x144 ft.; wood floors; owner builds with H. A. Shambaugh, Supt., 280 N. W. 59th St.; Russell T. Pancoast, Archt., 1657 Alton Rd.

**Fla., Sarasota**—Florida Dolomite Co., organized by John L. Early, Sarasota, installing mining and processing plant on holdings 2½ miles from Sarasota; S. D. Gooch, chemical engineer is president of company.

**Ga., Cartersville**—Cherokee Ochre Co., plans rebuilding burned plant.

**Ga., Swainsboro**—J. Randolph Coleman will enlarge and improve plant.

**Ky., Bardstown**—Fairfield Distilling Co., acquired tract near Bardstown; may erect distillery.

**Ky., Lexington**—Kentucky Independent Packing Co., completed negotiations for purchase of Muuns Brothers former plant on Old Frankfort pike, will expend \$100,000 for remodeling and modernizing; work to be started in 10 days.

**Ky., Midway**—Max Weinberg, St. Louis, Mo., has site of 5½ acres near limits of Midway on Georgetown Rd.; erect distillery.

**La., Crowley**—Home Ice Co., J. W. Barnett, erecting ice plant.

**La., Eunice**—Continental Oil Co., Oklahoma City, Okla., acquired 80 acres from Tepetate Oil Co., of Eunice for construction of cracking plant to be built immediately; furnish Eunice and surrounding territory with natural gas; cost of plant approximately \$100,000.

**La., Lake Charles**—Continental Oil Co., Oklahoma City, receiving bids for construction of new terminal on Calcasieu River below Lake Charles and a pipe line connecting new facilities with the Tepetate field in Acadia Parish; cost approximately \$350,000; terminals will include a 500 ft. dock, two 80,000 bbl. and one 10,000 bbl. oil storage tanks and necessary buildings for operatives; pipe line will be of 6-in. welded pipe, 50-ft. long; also reported, that company is considering erection of natural gasoline plant in Tepetate field.

**La., New Orleans**—Johns-Manville, 22 E. 40th St., New York, advises engineering work governing construction of new plant will be by company's engineering department, covering building and engineering features of operation of plant; purchasing will be done currently; 4 acres of floor space; no contract let yet for machinery; work in early stages of design and specification; will manufacture asphalt roofing, cements and rigid shingles.

**La., New Orleans**—Billingsley Engineering Co., Interstate Bldg., completed plans and specifications, soon call for bids for 2-story, 50x50 ft., rein. conc. and brick office building, 4400 block N. Galvez St., for Flintkote Co.; pile found.; water proofing and damp proofing; conc. and brick walls; plastered interior; millwork; sheet metal work; steel sash; steam heating, etc.; cost \$50,000.

**Md., Baltimore**—Columbia Specialty Co., plans erecting addition to plant Eastern Ave. and Gunter St.; 35 x 200 ft.

**Md., Baltimore**—Standard Oil Co. of New Jersey, has plans completed for office building, 1443-59 S. Clinton St.; stone; 1-story; 40x50 ft.; owner builds; cost \$16,000.

**Md., Baltimore**—WOAC Realty Co., Wilmington, Del. (Coca Cola Co.) acquired former distributing warehouse of Simmons Co., 1200 block E. Fort Ave., also seven 2-story dwellings in front of the warehouse; properties adjoin plant of Coca Cola Co., will be used for possible future expansion.

**Miss., Calhoun City**—A. B. Myers, installing ice plant.

**Miss., Columbus**—Columbus Casket Co., remodeling old Tombigbee Cotton Mills building for casket plant.

**Miss., Greenwood**—Southland Gravel Co., S. A. Gano, Pres., Greenville, installing washing plant at gravel mines.

**Miss., Hattiesburg**—Domestic Silks, Inc., 463 Seventh Ave., New York, plans installing 46 additional looms in plant at Hattiesburg; capacity 14,300 yd. silk daily.

**Miss., New Albany**—Chamber of Commerce negotiating with company for establishment of silk mill, city to erect building; manufacture silk goods.

**Miss., Philadelphia**—Mississippi Power Co., Gulfport, signed contract with citizens committee of Philadelphia, Miss., Chamber of Commerce and representatives of Massachusetts Knitting Mill, Boston, Mass., for establishment of hosiery mill; construction of building with 50,000 square feet of floor space will begin immediately; plant will involve investment of \$800,000; install 80 complete hosiery units with accessories.

(Continued on page 36)



# Expense Account

ONE MAN, ONE TELEPHONE, ONE MORNING

TUESDAY, 14th

**TONAWANDA, N. Y. \$1.35\***

Called Cummings of Consolidated. He was a little sore about slow delivery on last order. Smoothed that out; sold him a car-load of southern pine.

**LOUISVILLE, KY. \$2.35\***

Missed Jim Thompson down there last week. Figured his outfit must be running low on special trim and moldings. Gave him a call and got a nice order that might have gone to the next salesman who walked into his office.

**SCRANTON, PA. \$ .65\***

Had a hunch and called McKay Company. They were hunting a special wallboard for hurry-up concrete construction. Arranged to rush 7000 square feet of our No. 835FC direct from mill. Makes me solid with old man McKay—and a neat commission besides.

**HARTFORD, CONN. \$ .95\***

Planned a quick trip to see Sullivan about our hand-split cedar shingles. Telephoned first and found him out of town. Saved myself a useless visit and made a definite appointment for next week.

**BALTIMORE, MD. \$ .60\***

Post-card query came this morning. Didn't sound so hot, but I followed up by telephone. New customer and \$3400 order fell into my lap. I got there first!

\* The three-minute daytime rate for station-to-station calls from Philadelphia.



# Proposed Work

(Continued from page 34)

**Miss., West Point**—West Point Casket Co., A. H. Ingram, will rebuild plant burned at loss of \$25,000.

**Mo., Morehouse**—Harry Himmelberger of Cape Girardeau will rebuild mill of Himmelberger-Harrison Mfg. Co.

**Mo., St. Louis**—Celucoating Co. of St. Louis; capital \$30,000; Thomas Law, Alan A. Atchison, establish plant for coating of printed matter, and paper fabrics.

**Mo., St. Louis**—Taylor-Olive Investment Co., acquired site southeast corner of Taylor and Olive St., erect 3-story medical building; work to begin soon.

**Mo., St. Louis**—Carondelet Brewing Co., 2025 Gravois Ave., acquired old Phoenix Brewery at 217 S. 18 St.; install new equipment and rehabilitation plant; expend. \$150,000; capacity 100,000 bbl. yearly.

**Mo., St. Louis**—The Bondall Co. acquired 2-story factory building, 500 Bittner St.; expend \$15,000 for alterations, \$40,000 for machinery; manufacture brake linings, clutch facings, and other products; Chas. A. Niemeyer, Pres.

**Mo., St. Louis**—Griesedieck Bros. Brewing Co., A. A. Griesedieck, Pres., 1920 Shenandoah Ave., erect 1 story bottling plant 2308 Salena St. adjoining present plant; install new equipment; cost \$150,000; completion by April.

**Mo., University City**—Slavin Brothers, Inc., acquired tract of 8 acres in University City between Shaftsbury Ave., Wilson Blvd., Drexel Drive and Hanley Rd.; construct sewers and conc. street; develop for subdivision.

**N. C., Charlotte**—Hudson Silk Knitting Co., E. R. Pierson, Pres., soon begin construction of second unit of full fashioned silk hosiery; brick; 400x107 ft.; will house throwing equipment; cost \$40,000; in operation in March.

**N. C., Currituck**—Virginia Electric & Power Co., Richond, Va., will build 22 miles of rural power lines in Currituck County, if surveys made by State Rural Electrification Authority prove satisfactory; cost \$38,000.

**N. C., Greensboro**—Proximity Mfg. Co., has permit for \$50,000 warehouse on Cypress St. and \$5500 chemical building.

**N. C., Enka**—American Enka Corp., A. J. L. Moritz, V. P., 271 Church St., New York City; plans expending \$500,000 on normal replacements in 1936.

**N. C., Marion**—State Highway and Public Works Comsn., Raleigh, acquired limestone deposit near Marion; plans manufacturing road materials and agricultural lime; C. M. Wayne, Chmn.

**N. C., Tarboro**—Hart Cotton Mills, will release plans and specifications for alterations and additions to mill sometime about first of the year; main portion will consist of 1-story weave shed, 200x140 ft., which will be built between 2 existing buildings; J. E. Sirrine & Co., Engrs., Greenville, S. C.

**N. C., Wilmington**—Gulf States Creosoting Co., Hattiesburg, Miss., will establish wood preserving plant for treatment of forest

products, located 3 miles from city; work to begin immediately; operation by Feb.; acquired site of 250 acres on Brunswick River; Thomas C. Lane, of Charlotte, is in charge of the district office.

**Okla., Ardmore**—Southern Rock Asphalt Co., of Dougherty, acquired, will develop asphalt mines near Prairie Valley.

**Okla., Durant**—W. F. Lott, County Agt., interested in erection of cold storage plant; native stone; cost \$25,000. PWA project.

**Okla., Sand Springs**—Commander Mills, Inc., plans enlargement of Sand Springs Textile Mills, Inc.; install 64 wide looms at cost of \$25,000; contract let for equipment.

**S. C., Charleston**—T. Wilbur Thornhill, Pres., Charleston Oil Co., acquired 16 acre terminal site at North Charleston.

**S. C., Chester**—Springs Cotton Mills, Elliott Springs, Pres., will erect \$20,000 addition at Gayle unit to house Barber Colman warper and 100 looms.

**S. C., Chester**—Elliott Springs, Pres., Springs Cotton Mills, construct 5 apartment dwellings at Eureka unit; accommodation for 100; cost \$20,000; remodel old boiler building at Eureka plant, construct passageway to carding divisions; \$20,000 addition to Gayle unit.

**St. Louis & San Francisco R. R.**, St. Louis, Mo., expend \$2,000,000 in improvements, 1936.

**Tenn., Bruceton**—Reade Mfg. Co., 1150 Bdw., New York City, negotiating with J. A. Bryant, Mayor, for establishment of shirt factory; city to erect \$40,000 building.

**Tenn., Chattanooga**—United States Stove Works, South Pittsburg, Tenn., Arthur C. Jones, Pres., considering moving general offices to Chattanooga and establishing assembly plant, later may establish manufacturing plant.

**Tenn., Johnson City**—Pet Dairy Products Co., L. A. Bellew, Gen. Mgr., will raze present structure S. Boone St., erect \$50,000 building; company is enlarging buildings at Greenville, Charlotte, Durham and Greensboro, N. C., and Big Stone Gap, Va.

**Tenn., Nashville**—Nashville, Chattanooga & St. Louis Rwy. contemplates inauguration for stream line trains between Nashville and Memphis; cost \$500,000.

**Tenn., Pulaski**—Chamber of Commerce negotiating with outside capitalists for establishment of plant to manufacture silk goods.

**Tenn., Rockwood**—Russell Engineering Co., Detroit, Mich., has 90 day option on furnaces and 4000 acre land of defunct Roane Iron and Coal Co.; Cyril J. Smith, Rockwood, Atty. represented Mr. Russell; will improve.

**Tenn., Tullahoma**—American Timer Corp.; capital \$100,000; G. S. Lannon, Jr., C. R. Gaines manufacture electrical clocks for ovens, etc.

**Tenn., Union City**—Union Dairy Co., install cheese plant.

**Texas**—Banks L. Miller, Harlingen, rebuild \$25,000 burned grain elevator at Harlingen, erect elevator at Brownsville and San Benito.

**Tex., Aransas Pass**—Ray E. Kier, Corpus Christi, developing resort on Ransom Island, on Texas coast near Aransas Pass, 300 acres; work includes causeway to the mainland; shell road extending greater length of the island, tourist camp, dance pavillion, 2 fishing piers, boat channel, electric light plant, lay water supply mains.

**Tex., Cameron**—Kraft-Phenix Cheese Co., will lease building, remodel for cheese plant.

**Tex., Dallas**—Stockholders of Dallas Hotel Co. operators of Hotel Adolphus, approved consummation of loan of \$425,000 from Southwestern Life Insurance Co., for improvements to hotel and reduce outstanding indebtedness; will air condition Junior Ballroom and private dining rooms.

**Tex., Fort Worth**—Southwestern Exposition and Fat Stock Show plans \$1,612,000 program, including \$400,000 municipal auditorium to seat 3,000 people, with \$80,000 tower; \$150,000 structure divided into dancing casino and agricultural exhibit space; \$400,000 coliseum; \$150,000 merchant display and auto show building; coliseum to seat 6,000 people with space for 10,000 chairs.

**Tex., Houston**—Western Electrical Service, 105 Maury, acquired site in 6300 block of Navigation Blvd., erect plant; steel frame; hollow tile and brick; fireproof; 48x70 ft.; cost \$12,000.

**Tex., Houston**—American Can Co., of Louisiana, subsidiary of American Can Co., 230 Park Ave., New York, leased 34,000 square ft. of floor space at Commerce, Kendall and Drennan, for distribution point for all Texas, has office space in Bankers Mortgage Bldg.

**Tex., Houston**—J. I. Case Co., Racine, Wis., local quarters, 912 Wood St., leased portion of warehouse at Milby and Commerce Sts., as distribution point for South Texas; manufactures farm implements.

**Tex., Houston**—Golden Gate Wine Co., S. Solomon, V. P. and Gen. Mgr., headquarters Atlanta, Ga., leased space 1107 Wood St. at N. San Jacinto; will establish plant; install \$50,000 in equipment, include sterilizing, bottling, labeling, filtration equipment, boilers, etc.

**Tex., Houston**—Sam D. Cook, 3760 Farbar, has contract for factory type building, 6237 Navigation Blvd., to be occupied by Cook Heat Treating Co., Los Angeles, Calif. 12-16

**Tex., Houston**—Cook Heat Treating Co., Los Angeles, Calif., will occupy building to be erected 6200 block Navigation Blvd., by Mrs. N. Esperson; steel frame and fireproof; cost \$35,000.

**Tex., Mineral Wells**—Brazos River Conservation and Reclamation Dist., soon begin work on construction of Opossum Kingdom Dam, first unit in \$30,000,000 Brazos River project, 8 miles north of Mineral Wells; acquired 160 acre tract; work offices in charge of Eric Haquinus of Houston. 10-31

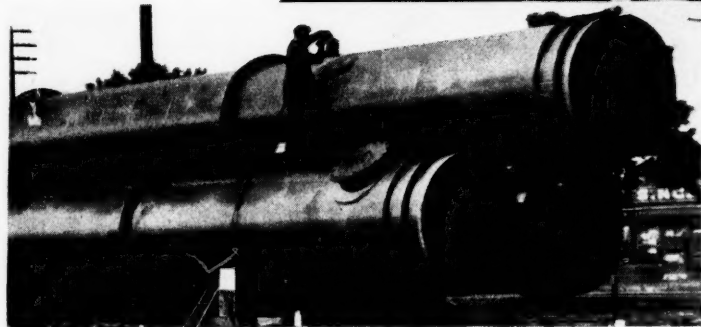
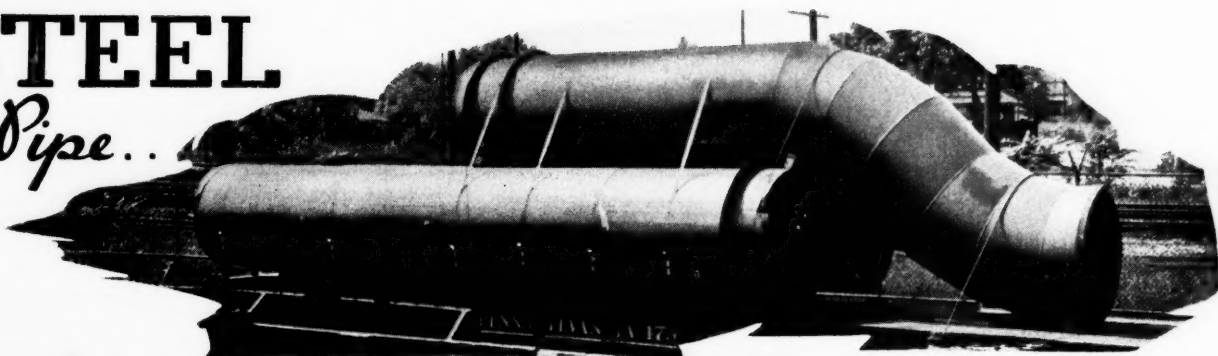
**Va., Culpepper**—S and K Knee Pants Co., Loft Bldg., Lynchburg, will move plant from Lynchburg to Culpepper; Giles H. Miller, Jr., Cashier of Culpepper Natl. Bank, organized local company to erect buildings; work to begin soon.

**Va., Culpeper**—Culpeper Industrial Building, Inc., Lewis P. Nelson, Jr., Sec., acquired 1 acre site East St. for erection of building to be occupied by S. and K. Knee Pants Co., Loft Bldg., Lynchburg; soon call for bids.

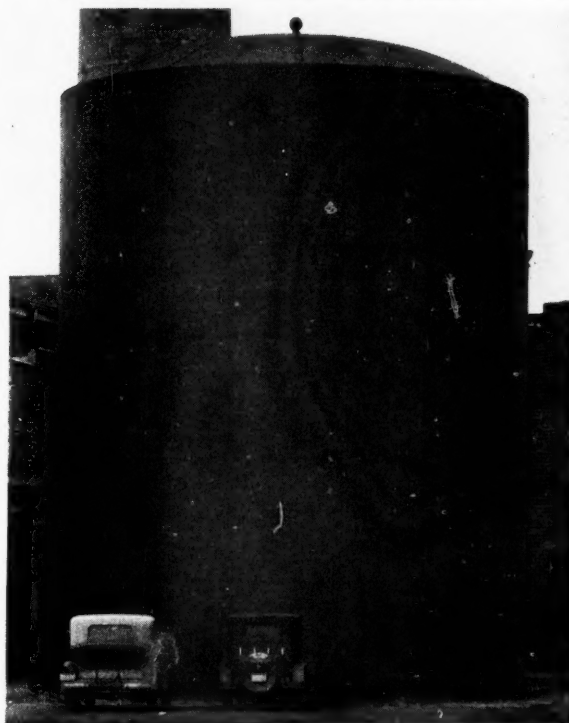
(Continued on page 38)

# STEEL

*Pipe...*



*Steel Tanks...*



● We are equipped to design, fabricate and erect steel tanks and plate work. The accompanying views show typical installations as follows:

*Steel Pipe*—5 ft. diameter welded construction.

*Steel Tanks*—300,000 gal. capacity for water storage.

*Steel Bins*—15 ft. diameter for grain storage.

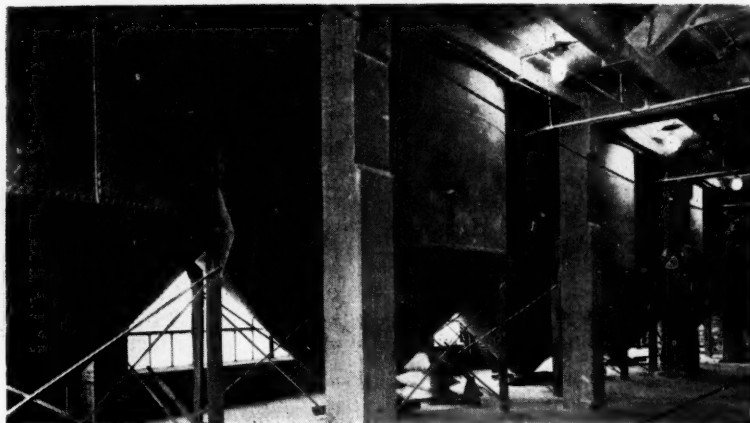
*Smokestacks*—Self-supporting type 100 ft. high.

When contemplating the installation of any of this type of work, write our nearest office for information and quotations. There is no obligation on your part.



*SmokeStacks*

*Steel Bins .....*



## CHICAGO BRIDGE & IRON WORKS

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Dallas .....	1408 Dallas Athletic Club Bldg.	Cleveland .....	2216 Rockefeller Bldg.	Detroit .....	1510 Lafayette Bldg.
Houston .....	2919 Main Street	Chicago .....	2106 Old Colony Bldg.	Boston .....	1510 Consolidated Gas Bldg.
Tulsa .....	1611 Thompson Bldg.	San Francisco .....	1040 Rialto Bldg.	Havana .....	Edificio Abreu 402

B-412

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.



## Proposed Work

(Continued from page 36)

**Va., Pulaski**—Charles Van Houten, Scranton, Pa., establish broad silk mill Pierce Ave.; later plans additional units.

**Va., Richmond**—Cavalier Distributing Corp., will erect bottling plant 2100 Westwood Ave., capacity 3,000 bottles daily; cost \$40,000.

**Va., Roanoke**—Neuhoff, Inc., 1803 Holliday, Lynchburg, plans erecting packing plant and abattoir in vicinity of Shaffer's Crossing between Patterson Ave. and Boulevard.

**Va., Salem**—Neugoff Packing Co., Lynchburg, considering establishing plant.

**W. Va., Elkins**—A. C. Spurr, Sec., Upper Monongahela Valley Assn., negotiating with company for establishment of woodworking plant.

**W. Va., Wheeling**—Hanna Coal Co., plans improvements to Willow Grove mine; erect steel tipple with ashing and drying plant; tipple will have capacity of 400 tons.

## Contracts Awarded

*Selected items of outstanding new work let to contract during December*

**Ala., Decatur**—Cooper Wells Co., let contract for construction of \$50,000 addition to hosiery mill plant; work to start immediately.

**Ala., Mobile**—O. M. Gwin Construction Co., 3503 Fern St., N. O., has contract at \$321,000 for constructing cold storage plant and fruit handling plant at state docks; Doullut & Ewin, Inc., Queen and Crescent Bldg., N. O., contract at \$60,787, for refrigeration equipment; J. B. Converse & Co., Inc., State Office Bldg., Mobile, Consit. Engrs.

**D. C., Washington**—Bahen & Wright, Inc., have contract for No. \$129,900 machine shop and carpenter shop.

**D. C., Washington**—Dravo Doyle Co., Pittsburgh, Pa., has contract at \$370,350, for power plant equipment to be installed in power plant building, substation and sludge dewatering plant equipment for sewage treatment plant at Blue Plains.

**D. C., Washington**—McCloskey & Co., Philadelphia, has contract at \$1,323,000 for construction of extension to archives building.

**Fla., Arcadia**—Ivey H. Smith Co., Barnett Bldg., Jacksonville, has contract at \$79,977, for installing soft water plant and extension of water system; water from Peace river will replace supply now being obtained from deep wells; C. K. Dodds, Consit. Engrs.

**Fla., Miami**—Walter Butler Co., St. Paul, Minn., has contract at \$956,000, for N. W. Sixty-second St. housing project.

**Fla., Miami**—E. H. Latham Co., 609 Guaranty Bldg., W. Palm Beach, has contract at \$386,000 for water production and treatment plant at Hialeah.

**Ga., Milledgeville**—Virginia Engineering Co., Newport News, has contract at \$246,713 for construction of power and light plant for state institutions; A. E. Schofield, Jr., Engr., Milledgeville.

**Ky., Louisville**—Charles E. Cannell Co., 2138 S. Floyd St., Louisville, has contract at \$200,000, for sewer construction; W. M. Caye, Technical Engr., 400 M. E. Taylor Bldg.

**La., Marrero**—Paper Makers Chemical Corp., J. H. Watermeier, Jr., will award contract to Industrial Engineering & Con-

struction Co., 316 Hibernia Bank Bldg., New Orleans, for proposed alterations and additions to alum plant and size plant.

**La., New Orleans**—United Dredging Co., New Orleans, has contract at \$594,210 for dredging approximately 6,600,000 cu. yd. in Chicot Pass Channel, Atchafalaya Basin, Second N. O. Dist.

**Md., Cumberland**—George F. Hazelwood, Cumberland, has contract for addition to dye house for Celanese Corp. of America, contract also includes excavating, conc. form and masonry work; Kalman Steel Co., Pittsburgh, Pa., has contract for rein. steel; Guibert Steel Co., Pittsburgh, Pa., for struc. steel; Tri State Roofing Co., for roofing and insulation; United States Gypsum Co., Chicago, Ill., for gypsum roof dock; R. E. Saum, Cumberland, for sheet metal; Independent Erection Co., Pittsburgh, Pa., for steel sash; Wm. M. Clark & Son, New Castle, Pa., for drainage and plumbing; cost \$78,000.

**Md., Westminster**—G. Walter Tovell, Inc., Eutaw & Monument Sts., Baltimore, has contract for warehouse for Sherwood Distilleries, Inc.; brick; 5-story; 82x156 ft.

**Missouri**—Kansas City Bridge Co., Kansas City, Mo., has contract at \$1,221,670 for construction of bridge over Missouri River at Weldon Springs.

**Okl., Edmund**—W. S. Bellows Construction Co., Oklahoma City, has contract at \$480,386 for construction of men's and women's dormitories, Central State Teachers College; Winkler & Reid, Archts.

**Okl., Fairfax**—Continental Oil Co., Tulsa, awarded contract to E. R. McCarthy Pipe Line Contracting Co., Tulsa, for relaying old 16-mile, 10-in. diam., 32-lb. mechanically coupled pipe line.

**Okl., Oklahoma City**—Dunning Construction Co. has contract for construction of city hall; Leonard H. Bailey, Archt., 1217 Colcord Bldg.; \$585,257.

**S. C., Charleston**—The Citadel, Military College of South Carolina, let contract at \$496,000 to Fiske-Carter Construction Co., Greenville, for construction of officers' quarters, chapel and mess hall; J. E. Sirrine & Co., Archts., Engrs., Greenville; L. S. Le-Tellier, Assoc. Engr., Charleston; plan beginning work immediately.

**Tenn., Bristol**—V. B. Higgins & Co., Charlotte, N. C., has contract at \$588,512 for construction of water works.

**Tenn., Memphis**—Standard Brake Shoe & Foundry Co., has permit for foundry, southwest corner of Bodley and S. Main Sts.; steel; 150x122 ft.; coke-fired furnace.

**Tenn., Memphis**—Wheeling Steel Corp., 285 W. Trigg St., let contract to S. Malkin Construction Co., for \$100,000 warehouse on Webster Ave., 1-story; 328x349 ft.

**Tex., Corpus Christi**—McKenzie Construction Co., Smith-Young Tower, San Antonio, has contract at \$602,848 for sewer system.

**Tex., Dallas**—P. O'B. Montgomery, 815 Gulf States Bldg., Dallas, Gen. Contr. at \$275,000 for petroleum travel and transport building, Texas Centennial Central Exposition.

**Tex., Eagle Pass**—Maverick County Water Control and Improvement Dist. No. 1, let contract at \$1,474,676, to Hardwick & Co., St. Louis, Mo., for main and lateral canals and structures; W. E. Callahan Construction Co., second at \$1,687,713; Myers, Noyes & Forrest, Engrs., 2204 Tower Petroleum Bldg., Dallas.

**Tex., Galveston**—State Highway Comsn. let contract at \$1,675,027 to Austin Bridge Co., Dallas, for construction of substructure, concrete superstructure and approaches for causeway over Galveston Bay; Terrell Bartlett, Engrs., Smith-Young Tower, San Antonio.

**Tex., Houston**—Knutson Construction Co., Union Natl Bank Bldg., has contract for completing building, southwest corner Fannin and Pease Sts., owned by Joseph F. Meyer, to be occupied by Houston Wall Paper and Paint Co.; Cameron D. Fairchilds, Archt., Houston Mchts. Exchange Bldg.

**Tex., Mission**—Cement Gun Co., Allentown, Pa., has contract at \$407,164, for Hidalgo county water control and improvement Dist. No. 7.

**Tex., Port Arthur**—Union Bridge & Construction Co., Kansas City, Mo., Contr. at \$911,614 for construction of substructure of Neches River bridge, probably sub-let part of project to Austin Bridge Co., Dallas; Ash-Howard-Needles & Tammen, Engrs., 1012 Baltimore Ave., Kansas City, Mo.; G. G. Wickline, Engineer-in-Charge, Austin.

**Tex., Port Arthur**—Union Bridge & Construction Co., B. M. A. Bldg., Kansas City, has contract at \$911,614 for construction of substructure of bridge over Neches River.

**Tex., San Antonio**—F. A. Nunnally, 118 Delaware St., has contract for creamery building Fredericksburg Rd. at Linn Ave., for Knowlton Creamery; Ed Hudson, 823 Hoefgen Ave., contract for electrical work; Phil Lloyd Shoop, Archt., Travis Bldg.; Lilly & Drought, Engrs., Frost Bank Bldg.

**Tex., Texas City**—Pan-American Petroleum and Transport Co., 122 E. 42 St., New York City, started preliminary ground work on erection of 2 units, cost approximately \$2,000,000, in connection with expansion program; Foster-Wheeler Corp., 165 Broadway, New York, and M. W. Kellogg Co., 225 Bdwy., New York, Contrs.; one of the units will be a catalytic polymerization still, cost \$1,000,000, second unit contemplated will be of greater capacity; Kellogg Co. has contract for this unit; capacity of present unit 35,000 bbl. daily.

**Tex., Tyler**—E. H. Reeder Construction Co., Dallas, has contract at \$198,763, for water works improvements; Hawley, Freeze & Nichols, Engrs., Capps Bldg., Fort Worth.

**Va., Lynchburg**—Lynchburg Foundry Co., has contract at \$401,907, for 42,226 ft. of c. i. pipe for Pedlar aqueduct project; Richard F. Wagner, Director of Water Dept.

**W. Va., Charleston**—Frederick Page Contracting Co., Inc., 45 E. 17th St., New York City, has contract at \$68,895 for constructing incinerator and equipment, Sch. B; Criss & Shaver, Charleston, W. Va., has contract at \$31,440, for excavation; Sch. A; C. P. Fortney, Consit. Engrs., 205-9 Union Bldg.; building will be erected on Coal Branch on Elk River out side of city limits; plant will be of 200-ton capacity, 2 furnaces of 100 tons each; 65x45 ft.; 3-story; fireproof; conc. floors.

**W. Va., Huntington**—Consolidated Engineering Co., St. Paul and Franklin Sts., Baltimore, Md., has contract at \$300,570 for construction of dormitories at Marshall College; Meanor & Handloser, Archts.

**W. Va., Wheeling**—The Austin Co., Cleveland, O., has contract for enlargement of Warwood plant, of Continental Can Co., 1 Pershing Square, New York, work includes heating, plumbing, lighting, etc.

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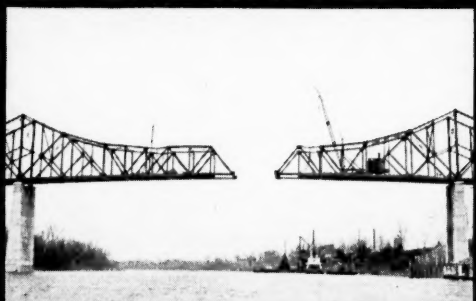
More and more State highway departments have been enabled to connect up important routes with a safe dependable steel bridge, good for today and many tomorrows.

Our Company has had a considerable part in this, just as it has had in steel bridge and building construction generally throughout the South and West for over 40 years.



### VIRGINIA BRIDGE & IRON CO.

Roanoke Birmingham Memphis Atlanta New York  
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720-foot Cantilever Highway Span over White River, Clarendon, Ark., manufactured and erected by us. Ira G. Hedrick, Inc., Consulting Engineer, Austin Bridge Co., General Contractors.



766-foot continuous span over Tennessee River, Scottsboro, Ala. Kansas City Bridge Co., General Contractors.



766-foot continuous span and four 200-foot spans over the Tennessee River at Whitesburg, Ala. Hardaway Contracting Co., Gen'l Contr's. We manufactured and erected this steelwork, as well as the Scottsboro Bridge above.



640-foot Cantilever Span over White River, Newport, Ark. Ira G. Hedrick, Inc., Consulting Engineer, Missouri Valley Bridge & Iron Co., Gen'l Contr's. We furnished a duplicate of this span for White River Bridge at New Augusta, Ark.

# STEEL CONSTRUCTION OUTLOOK

By

**V. G. Iden**

Secretary, American Institute of Steel Construction, Inc.

**C**ONSTRUCTION lagged during the past three years largely because the socializing influences, exercised through government work, have blighted all private endeavors. Recovery will be assured when private investments will once more be made safe, thereby encouraging private building. The realistic attitude today displayed by both the Government and the Public towards this problem is the basis for the improved sentiment among all builders and especially among the fabricators and erectors of structural steel.

## Prospects for Private Building

Bridge building has afforded the basis for the larger part of the market for this industry during the past year. This work, it is expected, will continue in comfortable volume during 1936. Such work, naturally, is chiefly financed by public funds. But the day of post office building is over and the day of boondoggling is presumably waning. Builders are once more polishing off their office signs and looking around for private business. We may not in the South again witness as great a migration of an industry, as was the case with cotton textiles, but there is a diversified manufacturing development under way and it is evident that with the opening up of highways and the redistribution of population another era is dawning for the south.

## Low Tonnage and Low Cost

Structural steel is a product the sale of which depends entirely upon the volume of construction going forward. Yet the tonnage of fabricated structural steel sold during 1933, 1934 and 1935 was the lowest in the recorded history of the industry. Furthermore the prices at which the products of the industry have been sold have been the lowest in history. A credit survey was recently made by the Robert Morris Associates. It revealed the fact that during the past three years this industry dissipated ap-

proximately one-half its resources (capital and cash) in the sale of its output at less than cost. These cut prices were encouraged by the sharp buying of contractors on government work who preyed upon the anxiety of the fabricators to get even a part of their overhead so that they would not have to bear the full burden of that overhead were their shops closed.

## Basis for Encouragement

With such a history behind them there is nothing unnatural in the comparative optimism that today pervades the industry. The weaker shops have been closed, the bankrupt concerns liquidated. The depression has taken its toll and competition is thereby reduced. With the slightest upturn in the volume of business there will naturally follow a rapid increase in price and a restoration of a condition which, comparable with today's, will seem indeed prosperous. But this increase will not come through government spending, but rather through the increased demand on the part of private investors in buildings and construction projects.

## Profitless Operation

During 1933 the industry, as a whole, sold less than 900,000 tons of fabricated structural steel. This was approximately one-fourth what the industry has normally sold in a normal year. During 1934 the volume of sales slightly exceeded 1,000,000 tons. The volume of sales during 1935 will not be quite as large as the volume sold in 1934. The fact that there was a slight slump in the volume of business done this year is not so disappointing as it might be considered upon its face. Had the industry been able to obtain a price for that tonnage equal to what it cost to produce there would have been no complaint whatsoever.

A firm of public accountants, Miller, Franklin, Bassett & Co., acting independently of the industry, made a cost survey last summer. That survey indicated that the tonnage of fabricated steel sold during 1934 had been sold at a price between five and ten dollars below what it had cost the plants to produce it. A cost survey made upon current business showed that the price is still about three dollars below the cost. This would make it appear that the industry is beginning to experience a slight improvement in return and they

are beginning to obtain a larger part of their overhead of doing business. It is probably too soon to expect that profits will be immediately realized. Politically the profit motif is no longer acceptable. But it is economically reasonable to expect that profits must be restored in this and all other industries before the depression can be said to have been definitely overcome.

## Local Business

Construction is essentially a local undertaking. Even the Supreme Court of the United States has recognized it as such. Economically that is a most important fact. The several hundred fabricating shops scattered over the country normally serve their locality in which they are situated. They fabricate and erect steel for their neighbors. Manifestly it is easier and more satisfactory to do business with and for your neighbors. This neighborhood building stopped during the depression. The fabricating shop had to go far afield for its business, and the bulk of that business offered was government business. The bidding on it was severe and the competition deadly. Very few shops were able to make anything out of it. Most of them have become convinced after three years of experience that the game is not worth the effort.

## Where Demand Will Develop

The improvement of private business at this time therefore affords the greatest reason for encouragement. The program for the elimination of grade crossings, to finance which Congress has provided an advance of \$200,000,000, will start shortly and the greater part of the projects will get under way in 1936. There are in preparation also the construction of a number of airplane hangars. The increase in air travel, the building of larger planes, have brought about the need for enlarged and improved hangars. The utility companies are in need of extending their plants. The electrical producing equipment of the United States is at least 20 per cent short of requirements. The utilities must build immediately to keep up with their demand. Also as business improves and consumer goods move in large volume, there will be need for additional factory space. All of this portends an improved demand for fabricated structural steel.

The need for shelter is also increasing. The housing shortage is not merely a politician's figure of speech—it is actual, as proved by the demand for space in nearly every urban center.

These are a few of the reasons why the members of the steel construction industry are more optimistic today. They believe the worst is behind them.



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# SOUTHERN PINE ON THE UPGRADE

By

**E. L. Kurth**

President, Southern Pine Association  
Keltys, Texas

**W**ITH a year of constructive accomplishments and healthy improvements behind it, the Southern Pine Lumber industry in 1936 looks forward to a period of better opportunities for employers and employees alike. At no time in the recent history of the industry has it been in as sound a statistical position, or has it been faced with as favorable an outlook.

Outstanding among the accomplishments of the industry during 1935 was a reduction in total stocks on hand of 18%. The industry enters 1936 with some 360 million feet less in stocks than it had at the beginning of 1935. Another significant accomplishment is evidenced by an analysis of the payrolls of the mills at the end of the year. The number of men employed by Southern Pine mills is 13% higher than it was in 1934, when the Lumber Code was in effect, and the increase in employment since the low period of the depression in 1932 is 46%. The income of the employees of Southern Pine sawmills this year was 37% higher than 1934, and 128% higher than 1932.

## Larger Production and Shipments

Southern Pine production during 1935 will approximate 5,200,000,000 feet, an increase of 11% over 1934. That the gain made by the industry in this respect is pronounced is evidenced by the fact that the total production in 1932 was only 3,000,000,000 feet. Shipments this year aggregated 5,560,000,000 feet, an increase of 19% over last year. As a result of the reduction accomplished in stocks on hand, a proper relationship has been established between supply and demand. Accordingly, the industry will be relieved of those pressures which ordinarily result in cut-throat price competition, which in turn forces wage reductions in an effort to reduce costs.

## 1935 Best Year Since 1930

On the whole, the year of 1935 was the best experienced by this industry since 1930. Every indication points to the fact that 1936 will be even better. Among the factors which point to continued improvement is the steadily in-

creasing amount of private building operations. During 1935 more than 100,000 new homes were built, and it is expected that next year will witness the building of at least twice this many. As a matter of fact, the normal needs of this country require the erection of approximately 500,000 homes a year. The depression has set us back more than 2,000,000, and it would not be at all surprising if 1937 and 1938 may not see home construction reach the astounding figure of 750,000.

## Greater Prospective Demand

Federal, state and municipal construction work already planned for the near future will provide another large outlet for Southern Pine lumber. There is also in prospect a large demand from the railroads, who are faced with the immediate necessity of replacing and repairing freight cars and bridges, and improving their maintenance-of-way. It is also believed that an increase in the demand for lumber will come from many industries to accomplish the rehabilitation and expansion of plants, and to take care of the needs of wood-using industries, such as automobile, furniture, farm implements, etc. The farmers, too, should be in a better position than they have been for a number of years to properly house their live stock, crops and implements.

The recovery of the Southern Pine lumber industry will mean much to the South, for it, together with the other branches of the lumber industry, affords more employment than any other Southern enterprise. The lumber industry, likewise, has larger payrolls and contributes more in the way of taxes than any other industry. Better conditions in this industry, therefore, mean better conditions throughout the South, and that is what we confidently expect for 1936.

## Furniture Industry Active

Following the unparalleled activity in furniture manufacturing during the last half of 1935, the outlook for the new year is particularly encouraging. Southern furniture manufacturers are particularly active with factories working at normal speed. The industry will watch with interest the legislative trends of Congress and along with other industries, furniture men are expected to vigorously oppose any new measures of regimentation similar to the discredited NRA system.

## New Business Encouraging for 1936

**W**ITH the lumber business of the country showing a big gain for 1935, although still less than half of the 1929 level, and with lumber bookings continuing heavy as the year closed, the outlook for 1936 is more encouraging than for some years. Greater optimism prevails among the leaders in the industry producing Southern pine, hardwoods and cypress.

## Consumption 17,500,000 Feet

Consumption of lumber during the last half of 1935 was about 20 per cent above the corresponding period of 1934 and the estimated output for the year will aggregate approximately 17,500,000,000 feet as compared with only 10,000,000,000 feet produced in 1932, the lowest in 65 years. Residential building since July, which shows a gain of 2½ times the floor space of the last six months of 1934, is expected to greatly increase in 1936. Industrial demand for lumber is also increasing following the upward trend of recent months.

## Removal of NRA Restrictions Stimulated Trade

It is significant that the greatest improvement in the lumber industry has been experienced since the abandonment of the NRA and the lumber code. This release from governmental interference and regimentation revived confidence and brought the return of sound competition that promoted trade. With the result that there are reasons for expecting the new year to bring in a further improvement in the industry. Lumber manufacturers generally, says the National Lumber Manufacturers Association, have recorded themselves as frankly opposed to the restoration in any form of legislation incorporating the basic principles and procedures of the National Industrial Recovery Act. They regard the principles underlying the Code system as incompatible with the opportunity for continued recovery and the further restoration of employment in the lumber and timber products industries; and its procedures in practice as incapable of prompt, uniform and equitable administration and enforcement. No single industry entered the code undertaking more willingly, with higher hopes, or with greater enthusiasm and determination. None emerged from it with more complete, more convincing or more universal disillusionment.



# ROT PREVENTED

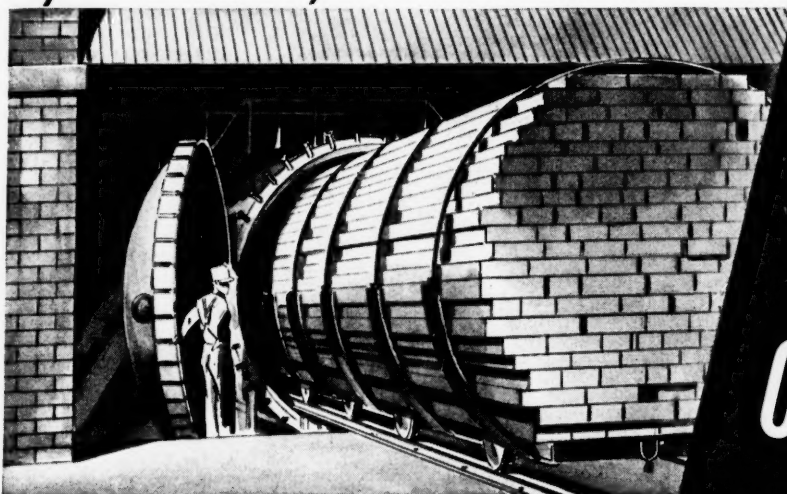


# TERMITES REPELLED

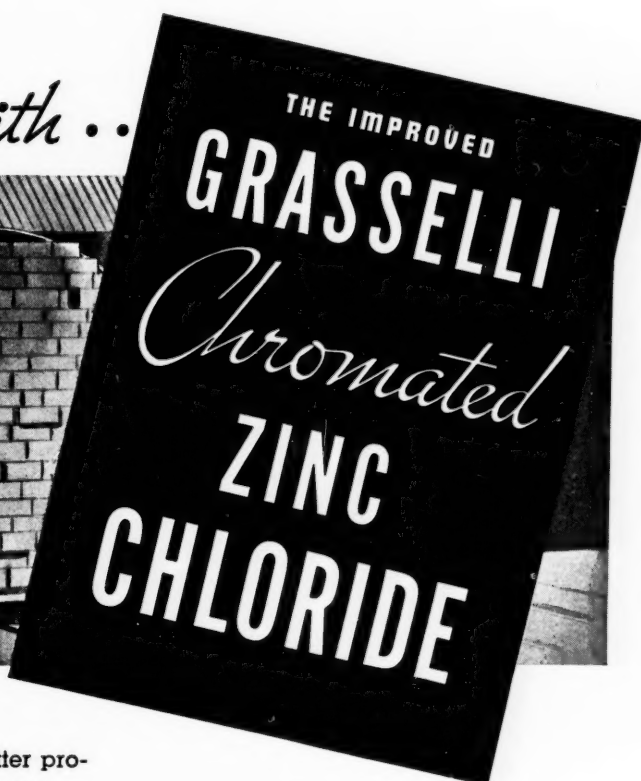


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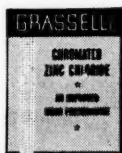


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# GOOD ROADS AND MOTOR TRANSPORT

## Highway Meetings

With the National Road Show at Cleveland, O., January 20-24, and scheduled important meetings of road building interests, the year begins auspiciously for the highway construction industry. Greater activity is anticipated throughout the country with materials producers, equipment and machinery builders expecting increased business in the coming months.

One of the important conventions is that of the National Paving Brick Association which holds its 30th annual meeting at Columbus, O., January 29-31. Among the topics discussed will be resurfacing and replacement with paving brick; proper maintenance methods, brick pavements for bridges, etc.

## New Road Building Processes

In addition to recently-tried methods of building roads with the use of cotton webbing and salt, it is announced that a new type of cement-soil road is under study in South Carolina. The sandy soil of that state offers a good highway material, it is said, if a suitable binder for the base can be found. Cement is declared to be the solution of the problem. It is spread over a sand-clay road and mixed into the soil with scrapers, after which comes a heavy sprinkling of water followed by a thorough packing with rollers. On such a sand-cement base the usual bituminous surface is applied.

So called cotton roads contain very little cotton—only a few bales to the mile. As with most secondary, lightly traveled roads the aim is to prevent separation of the top surface from the base and thus decrease wrinkling or washboard effects, holes and general erosive deterioration. Cotton webbing in wide sheets is laid over a crushed stone base and bituminous adhesive material applied. Above this comes the finer crushed stone for the top surface. Cotton fabric binder is being used in airport runways. Contracts have recently been awarded for the construction of such a runway at the airport at Newark, N. J. The United States Bureau of Public Roads plans the construction of several cotton road experimental projects of appreciable length.

A "salt road" is to be constructed in Vandt County, Texas, near America's largest salt mine, property of the Morton Salt Company, which will furnish

the raw material. Sixteen tons of salt to the mile will be mixed with sand and clay and used as a 3-inch top dressing for the road.

Cornell University is at present experimenting with the construction of salt roads. Unlike cotton, however, salt is not used solely as a binding material between the base and top surface, but is mixed into the natural clay of the road and serves to keep it moist.

## New Motor Vehicle Registration

Bills to defer automobile registration dates will probably be introduced in six of the nine states whose legislatures meet in regular session after January 1st.

Success of deferred registration in increasing state revenue in the 29 states which have already postponed their registration dates is encouraging legislators in Massachusetts, New Jersey, Rhode Island, Kentucky, Mississippi, and South Carolina to consider similar measures.

It is estimated in many northern states 25 per cent of all motor vehicles are kept in garages during January, February, and March, because their operators are unwilling to pay registration fees during months when maximum use of motor vehicles is cut down.

States that have postponed registration until several months after January 1 have found an increased use of motor vehicles during this period with a consequent improvement of business in all automotive fields.

The 29 states that have changed their registration dates from the first of the year include:

State	Final Date
Alabama	November 15
Arizona	February 1
Arkansas	January 10
California	January 31
Connecticut	February 28
Florida	January 15
Georgia	February 1
Idaho	March 31
Iowa	February 1
Kansas	February 1
Louisiana	February 5
Maine	March 1
Minnesota	February 15
Montana	February 1
Nebraska	February 1
Nevada	February 1
New York	February 1
North Dakota	May 15
Ohio	April 1
Oklahoma	March 31
South Dakota	March 31
Tennessee	April 1
Texas	April 1
Utah	March 30
Vermont	March 31
Virginia	April 15
West Virginia	July 1
Wisconsin	February 1
Wyoming	March 1

## Virginia Expend \$22,747,000 On Roads

According to the annual report to Governor Peery, the Virginia Highway Commission expended \$22,747,862 for the construction and maintenance of primary and secondary roads in the fiscal year ended June 30, at an engineering and overhead cost of 4.2 per cent. New construction on the primary system entailed a cost of \$8,268,512 during the year, including 85 paving projects at a cost of \$3,330,000; 34 bridges costing \$784,000; 11 free labor projects costing \$87,000, and 76 projects let prior to the beginning of the fiscal year. Other expenditures included treatment or retreatment of 1800 miles of road with bituminous materials; painting 100 bridges and repairing 200; planning 105 new bridges to cost \$1,000,000; 9,337 chemical and physical tests of materials at a cost of 2.15 per test, and testing 16,000 cars of material at 74 cents each. The State Highway Department has \$5,766,000 worth of road equipment.

## Two-Speed Axle Trucks

Three new models have been added to the line of International Harvester Company trucks, each of which features two-speed axle construction providing eight forward and two reverse speeds, thus offering all advantages of high-speed and low-speed axle ratios combined in one unit. The new models are the CS-30, CS-35, and CS-35-T. Model CS-30 is available in wheelbases of 133 and 157 inches, and Model CS-35 in wheelbases of 136, 160, and 175 inches. Model CS-35-T is a six-wheeler, a type of truck that has been so favorably received that the International Harvester Company plans to build them in greatly increased numbers. It also comes in two wheelbases.

## Dodge 1936 Trucks and Commercial Cars

Announcing a new series of trucks and commercial cars for 1936, the Dodge Division of Chrysler Corporation, Detroit, Mich., emphasizes "fore point" load distribution, hydraulic brakes, "pre-proved" economy, beauty of appearance and Amola steel springs. The new line will consist of the following chassis models: One-half, three-quarter, one, one and one-half (in two series), two, three and four-ton models. Specially built custom Airflow models will also be supplied.

# "YOU ROAD BUILDERS—

## Put this Tractor to the Test"



If you want real down-to-earth facts about efficiency in dirt-moving power, ask experienced operators—men who know both International Harvester TracTractors and *other* crawler tractors. Then ask the owner-contractors. And finally, watch the TracTractor on the job. You will come to definite conclusions as to TracTractor *superiority*—in power, stamina, accessibility, service, and LASTING ECONOMY.

Remember this about TracTractors: they are by far the *most accessible, most easily serviced* crawler tractors on the market.

Be guided by the 30-year experience of International Harvester—world's largest tractor builder—when you invest in power. For complete information on the International Harvester line of gasoline and Diesel power, consult the nearest distributor or branch.

SEE THE EXHIBIT of International Industrial Power and International Trucks at the Convention and Road Show of the American Road Builders' Association, Cleveland, O., January 20 to 24.

### INTERNATIONAL HARVESTER COMPANY

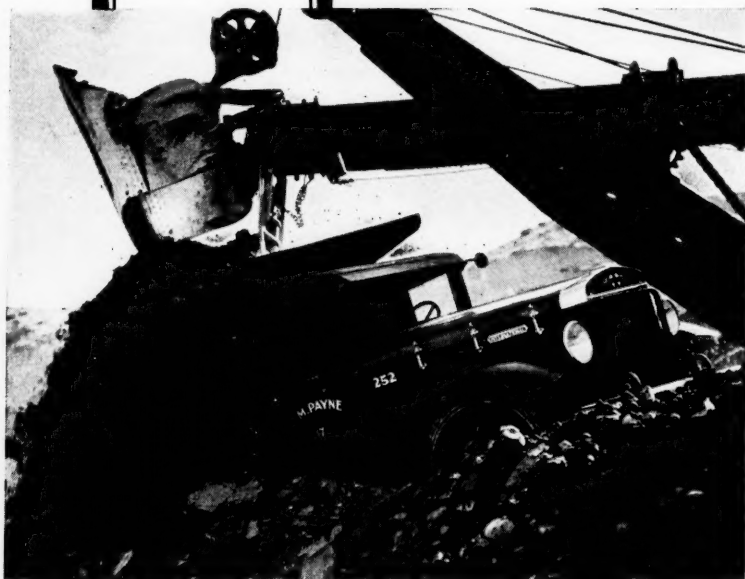
606 So. Michigan Ave.

(INCORPORATED)

Chicago, Illinois

## INTERNATIONAL TRUCKS

In most convincing fashion International Trucks have proved their reliability and economy in dump-truck work. Take the Model A-8 shown at the left. It is one of four owned by the C. M. Payne Contract Trucking Co., Spokane, Wash. All of them worked on the Grand Coulee dam, and C. M. Payne says "Our Internationals worked at less cost at Grand Coulee than any trucks we ever had." Experienced owners have put Internationals through their paces—depend on their judgment when you buy trucks.



# INTERNATIONAL HARVESTER

# EQUIPMENT

## NEW AND IMPROVED

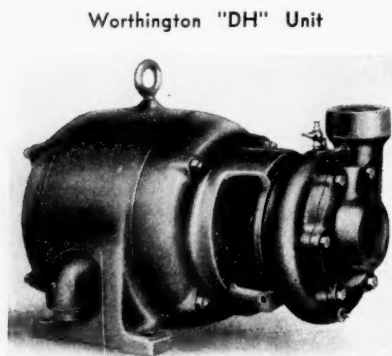
### Two New Controllers

Bailey Meter Company, Cleveland, Ohio, announces the development of a complete self-contained furnace draft controller requiring only a draft connection to the furnace and a supply of compressed air at approximately 35 pounds pressure. This controller accurately measures furnace draft with a large sensitive diaphragm, the movement of which actuates an air pilot valve admitting pressure to one end or the other of a drive cylinder until the damper position or fan speed has been changed sufficiently to restore furnace draft to the desired value. It functions independently of other control equipment.

Another new product announced by the Bailey Meter Company is an indicator-controller for pressure and temperature control applications not requiring a record of the factor under control, which may operate either a diaphragm motor valve or an air-operated control drive. The controller is housed in a round casing 13 inches in diameter.

### Monobloc Centrifugal Pump

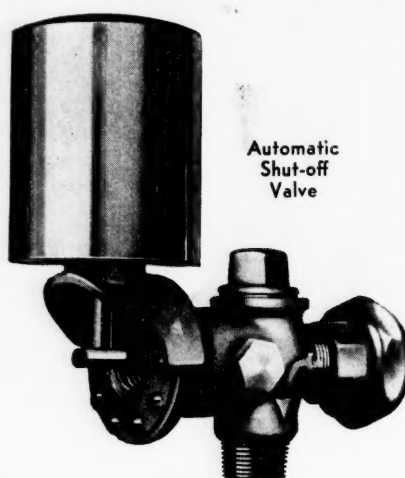
Worthington Pump and Machinery Corporation, Harrison, N. J., announces a new Monobloc Centrifugal Pump, designed especially for hot well service and for handling liquids near their vapor pressures. This is the DH unit, a type extensively used in power plants, oil refineries, breweries, heating systems, air conditioning plants, chemical, refrigerating, and many other industrial plants. It is available for capacities of from 10 gallons per minute against heads of 50 to 110 feet with 12-inch submergence, to 175 gallons per minute against heads of 50 to 70 feet with 60-inch submergence. The largest units require a floor space of only 24 by 16 inches.



Worthington "DH" Unit

### Lammert Control Valves

Embodying a number of new features and refinements, a Control or Automatic Shut-Off valve made by Lambert & Mann Company, Chicago, Ill., is of simple design and construction, extremely compact, with few parts and large capacity. It has interchangeable elements for air control, steam-pressure control, water pressure control or electrical control, and each control may be connected by merely screwing it into the standard valve-body



Automatic Shut-off Valve

mechanism. The valve can be adapted to automatic operation, to remote control, or to automatic operation plus an interlock with a manual-reset device. With the various types of interchangeable controls, it is applicable to many uses on manufactured products or equipment as well as in the power or supply lines of present power plants. With any of the types of control mentioned, the valve will handle the heaviest and most viscous oil without sticking. It is made in standard sizes from  $\frac{3}{8}$ -inch up.

### Welding Stud Eliminates Tapping Work

Developed to simplify "studding" procedure in welding cast iron to steel, repairing breaks in castings such as gear teeth, welding cast iron by the steel metallic arc method, and for other work requiring studs, a Hardened Metallic Drive Screw Welding has been introduced by Parker-Kalon Corporation, New York City. The new device forms a thread in cast iron or steel as it is hammered into a plain drilled hole, saves time and labor of tapping threads for ordinary studs, and is declared to hold more securely. It is an adaptation of the Hardened Metallic Drive Screw, which is also made by Parker-Kalon Corporation.

### Oil-Resisting Pneumatic Hose

The Republic Rubber Company, Youngstown, Ohio, announces a new air hose, made from a compound similar to that used in oil conducting hose and designed especially to overcome the deteriorating effects of hot oil from air compressors. The hose is declared to offer great resistance to heat, high pressures, abrasion, the cutting effect of sharp rock and exposure to the sun and weather.

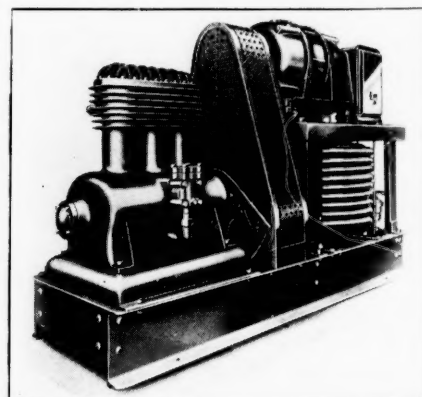
### Paint In Stick Form For Marking

Real paint in stick form which may be applied to wet and dry surfaces, and which will not run when applied to hot metals, is a new product announced by Helmer & Staley, Chicago, Ill. It is marketed under the name of Markal in two types—one for cold marking and the other for hot marking.

### Low Pressure Refrigerating Units

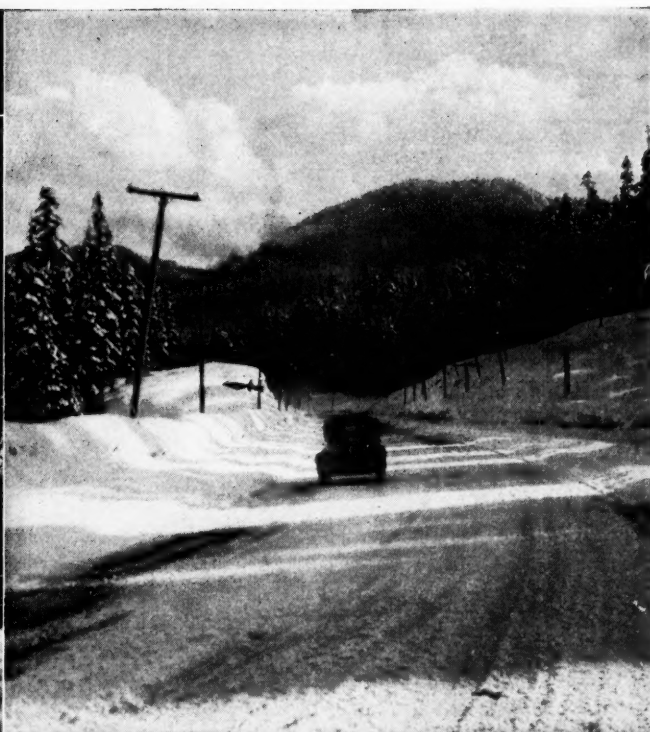
Especially designed for air conditioning and water cooling work, two new Freon refrigerating units are announced by Frick Company, of Waynesboro, Pa. The units comprise an enclosed-type compressor, driven through V-belts by a motor mounted above the fly wheel, with the condenser coil under the motor base. A 15-ton machine has three vertical cylinders and is driven by a 15-horsepower motor, while a 20-ton unit has four cylinders, arranged in V pattern, and is driven by a 20-horsepower motor. For horsepower given, the units have an unusually high refrigerating capacity, made possible by improved compressor design, extra large condenser, and other features. They are applicable to a wide range of services in addition to air conditioning.

15-Ton Freon Refrigerator Unit





From Florida . . .



. . . to Washington

## Experience of 18 States from coast to coast *shows concrete saves \$114 to \$469 per year per mile surface maintenance*

**T**HE Portland Cement Association has published a summary of the most exhaustive study ever made of comparative surface maintenance costs for various types of pavements.

The summary is based on detailed surface maintenance figures from official records of 18 state highway departments—every state that publishes these records. Figures include the latest records available when the summary was made, January 1935.

### ***Thorough comprehensive analysis***

The *consecutive* years of record vary from 3 to 14 and average 7.

Summary includes over 100,000 miles of state highway, almost  $\frac{1}{3}$  of the total improved mileage.

### ***Concrete costs least***

Average surface maintenance cost of 40,388 miles of concrete was revealed as \$105.74 per mile per year, ranging from \$42.30 to \$172.31 in various states.

The paving material next in maintenance cost averaged

\$220.26, or more than double the cost of concrete. It was also notable that this material which ranked second had a concrete base. The same material with a flexible base had an average maintenance cost of \$345.47 per mile per year.

### ***Concrete can take it!***

Low maintenance costs for concrete are all the more significant because the average daily traffic on concrete is in excess of 1000 vehicles. Some of the other types enumerated in the summary have relatively little traffic, but heavy maintenance expense.

### ***Concrete has public acceptance***

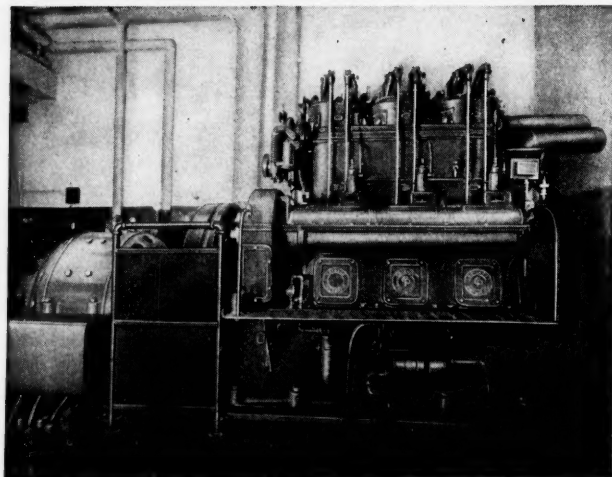
Motorists judge all roads by the standards of safety, economy and comfort set by concrete. They know that concrete lowers their gas, tire and car repair expense—that it is smooth but non-skid—clearly visible at night—swift but safe.

Write for the report entitled "Road Maintenance Costs as told by Available State Highway Records."

### **PORTLAND CEMENT ASSOCIATION**

Dept. A-1-21, 33 West Grand Avenue, Chicago

## Diesel Economy Is Greatest With **CP DIESELS** 80 to 800 H. P.



*A CP Diesel engine, 150 H.P., supplying power and light for a large storage warehouse.*

Numerous CP Diesel engine installations in Ice Plants, Flour Mills, Office Buildings, Industrial Plants, etc., have brought power and light costs down to **ONE CENT** per K.W.H. ---or less. Let us make a power survey without cost to you and submit our findings.

### CHICAGO PNEUMATIC TOOL COMPANY

Engine Builders for More Than 30 Years

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AIR & GAS COMPRESSORS • ROCK DRILLS  
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ELECTRIC TOOLS • PNEUMATIC TOOLS  
VACUUM PUMPS & CONDENSERS  
OIL WELL ROCK BITS, REAMERS & TOOL JOINTS

## CHICAGO PNEUMATIC

## FINANCIAL NEWS

### 1936 Outlook

Financial commentators, at the outset of the new year, predict a slow but definite growth for business in 1936. Although there has been doubt about the permanence of the betterment seen in the last few months, it appears now that industry is beginning to see more clearly ahead. Private construction, which creates a demand upon practically every industry, has made gratifying advances, and taken together with public building and engineering financed by government, 1935 showed an increase over the year preceding. In the South the total of \$112,000,000 for December was 78 per cent above November and the highest of any month since June 1930.

### Increase in Private Financing

An encouraging sign of returning confidence is the increased amount of corporate financing now being arranged. Largely intended for new plants and modernization, it betokens confidence in the future of industry that has been lacking in recent years. In all parts of the country, indications are that industrial organizations are in a mood to arrange their facilities for better products at lowered cost of production.

Some prognosticators believe that the total of new financing on the part of private industry during 1936 will be very close to \$1,000,000,000.

### Increased Deposits

The annual statements of banks show large increases in deposits and resources, but not a corresponding increase in loans. This was to be expected under the circumstances. As pointed out in this column repeatedly, bankers have been eager to employ accumulating funds for good loans, but the demand has been lacking. Reports indicate, however, that as industry gains confidence, which it undoubtedly is gaining because it feels the worst is over, and as further indicated by the public offerings of industrial bonds which are increasing in number and amount, the loan discount item in bank statements will be in better proportion to deposits than it has been.

### Government Competition

In the talk that has been more or less persistent about banks not doing their duty toward recovery by lending money more freely, a point frequently overlooked, aside from the unwillingness of industry to borrow, which has been the paramount reason of idle funds in bankers' hands piling up, is government competition in the lending field where huge amounts have been advanced at rates which bankers cannot meet.

It concentrates attention upon the whole question of government competition. Recognizing the vital aid extended to transportation interests, to industry and banks and to distressed home owners by government agencies if the time has not already arrived, it soon will arrive for the withdrawal of government activity in these directions and their return to private hands. It will be better for the country and will enable the banks to earn a reasonable living profit. The indispensable facilities they offer entitle them to a profit which for a long time it has been difficult to make, except through operations in the bond market.

(Continued on page 50)

# MORE BUSINESS... BUT LESS REVENUE

Aggressive merchandising activities and improved industrial conditions have resulted in a greater use of electricity than ever before by customers of the Associated System. The average domestic customer used 31 kilowatt hours more in the first ten months of 1935 than for the same period of 1934. Electric output increased over 6 per cent, and gas output over 4 per cent for this ten months period over 1934.

Nevertheless, net revenue is less, due to increased taxes, rate cuts and the higher cost of doing business. Taxes have increased 65 per cent from 1930 to 1934. Operating expenses including fuel costs for the twelve months period ending October 31, 1935, were 7.4 per cent higher than the same period in 1934. Accounting and legal expenses necessary to comply with new Federal and State regulations will mean increased expenditures.

To offset these drains on revenue, even more aggressive merchandising activities will be put into effect in 1936.

ASSOCIATED GAS & ELECTRIC SYSTEM



## Opportunities Ahead

New opportunities create new responsibilities for American industry and banking. The American banking system has contributed largely to the economic progress of this country. Its knowledge, experience and cooperation are now invaluable—with industry moving on to better times.



### Baltimore Commercial Bank

GWYNN CROWTHER, President

Baltimore, Maryland

*Member Federal Reserve System*

*Member Federal Deposit Insurance Corporation*

## A CANDID ANALYSIS of your needs

The George S. May Company has been tremendously successful, not only because of its ability to diagnose the needs of a business intelligently and to apply the proper remedies, but because it has always dared to tell the truth to every client, without fear or favor.

The merit of this policy is proved by its record of accomplishments in hundreds of well-known manufacturing plants.

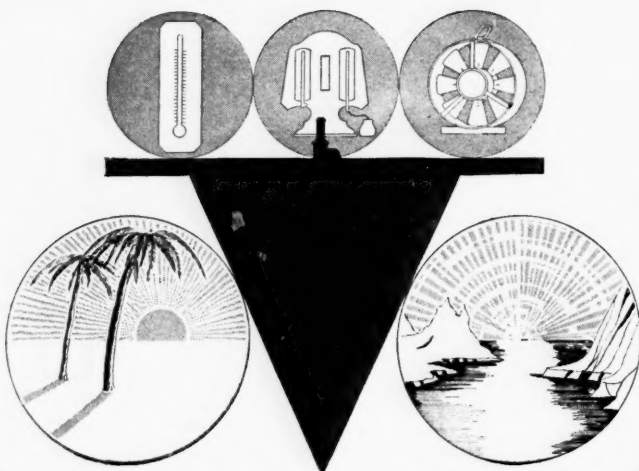
Write our nearest office for May Facts Nos. 1 to 12, showing actual results in 46 different manufacturing plants!

### GEORGE S. MAY COMPANY

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**P**ARTED forever are Nature's climatic extremes from man's life indoors, at work and in recreation. Reborn are the arts, professions, trades and industries embraced by modern heating, ventilation and air conditioning.

"The great industry of the future" has become the great industry of the present. Civilization is paying willing tribute to those whose knowledge, initiative and energy are promoting the world's health, comfort and efficiency.

What will be your share of the rich rewards? The answer is—what you make it. To be sure that you will be in line for the major prizes, one step is essential. You must be and keep informed! You must know the latest and the approved methods, materials, equipment, instruments, tools and supplies—and where to get them.

Your quickest, most efficient, surest way to check up and keep up is to visit the coming heating, ventilating and air conditioning exposition. Come!



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*Come.Examine.Compare.Discuss.Assimilate*

THE AIR CONDITIONING EXPOSITION  
**FOURTH INTERNATIONAL  
HEATING & VENTILATING EXPOSITION**

## Financial News

(Continued from page 48)

### New Rules for Brokers

Brokers' loans increased last year by nearly \$300,000,000, and having in mind presumably that too rapid an increase may point to a runaway market, the Federal Reserve Board is reported to be considering new regulations covering loans by banks on securities.

### Improved Railroad Outlook

Net operating income of Class I railroads are registering encouraging gains in 1935 over the preceding year. The Norfolk & Western, for 11 months, reported a net income of \$22,800,000 after taxes and charges, which is equal to \$15.61 on its common stock after deducting 4 per cent preferred stock dividend. This compares with \$18,453,525, or \$12.52 per common share in the first 11 months of 1934.

Passenger revenues have been definitely and encouragingly upward. Railroad officials express the opinion that the down trend of passenger traffic is ended and continued improvement may be looked for from now on. However, they are concerned about the ICC report to be made soon, which may reduce the basic rate to two cents a mile.

The encouragement afforded by the better position of the railroads as an indispensable part of the country's growth is having a great deal to do with returning confidence. Transportation interests, buyers of 25 per cent of the country's output of capital goods, have for a long time been buying very little more than what was absolutely necessary for safety and fair upkeep. With the necessity apparent, however, of meeting competition more definitely and effectively, a new outlook is opening in the railroad field.

### Need for Risk-Bearing Capital

John W. O'Leary, President, Machinery and Allied Products Institute, is authority for the statement that new security issues from private sources in 1935 will total only about \$375,000,000. This is just a little more than one-tenth the yearly average of 3.5 billions during the decade from 1920 to 1930. He says, "the need is for risk-bearing capital—investors who have confidence enough in the future to put money in business enterprises." He points out that some of the most spectacular gains in industrial recovery during 1935 were among manufacturers of machine tools, "but even this industry, whose production is among the highest of all capital goods industries, is at less than 60 per cent of the 1929 level."

### Housing Loans

According to a report of the Federal Housing Administration, a total of \$225,929,000 has been reached under the Modernization Credit Plan of the FHIA up to November 20, 1935. Five thousand, four hundred and seventy-two national, and state banks and trust companies handled more than \$154,000,000 of this, while the balance was divided between finance companies, industrial banks and other institutions.

### Public Debt

The total public debt of approximately \$50,000,000,000, made up of \$30,000,000,000 Federal and \$20,000,000,000 state and local, is about equal to the nation's present income for one year. It is estimated it is about one-fifth of the national wealth. To service this debt, the National Industrial Conference Board states it takes \$2,800,000,000 annually, representing more than 20 per cent of the revenue receipts of all governmental units from every source.

## WOLMANIZED LUMBER

Protected from Decay or Termite attack. Clean to handle. Holds paint well. Preservative is strongly fibre fixed, non-volatile and somewhat fire retardant.

### American Lumber & Treating Co.

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Pressure Treating Plant Service available from:

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## DEFEAT DRY ROT AND TERMITES

by pressure-treating your lumber and timber with ZMA or Creosote. Eppinger & Russell Co.'s preserving process increases the life of woods from 8 to 20 times. For more than half a century, the outstanding utilities and industrial plants have depended upon Eppinger & Russell Co. for long-life, low-maintenance lumber that is immune to decay, dry rot and termite attack.

PRESSURE-TREATING PLANTS AT:  
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WOOD PRESERVERS SINCE 1878  
**EPPINGER & RUSSELL CO.**  
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## CREOSOTED TIES, PILING, POLES, POSTS, CROSS ARMS, and LUMBER

### WOLMANIZED LUMBER—

Decay and Termite Proof—Can Be Painted

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"MILLERIZED" ASPHALT  
ROOFING with patented

## SEALED GRANULES

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"SOUTHERN MADE FOR SOUTHERN TRADE"

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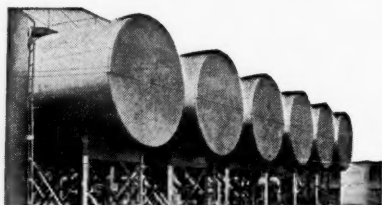
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and Manning  
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Established 1854  
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## SOUTHLAND PRODUCTS —WELDED OR RIVETED—



We now manufacture and offer to the trade tanks in all sizes for pressure or gravity work. Also other steel equipment of either

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This applies to field as well as shop built equipment.

Write us for information and quotations.

**CHATTANOOGA BOILER & TANK CO.**  
CHATTANOOGA, TENN.

## DAVIS CYPRESS TANKS

Some especially desirable attributes must surround Davis Tanks—when you realize that leading manufacturers and railroads of the South have bought them repeatedly for 46 years. In truth, there are two reasons:

1. Cypress is unequalled for durability, low depreciation and varied usefulness in storage, processing and handling chemicals and other liquids.
2. Davis tanks, built by modern machinery and skilled men, can be made to fit any factory need, in any size and shape. Catalog on request.



**G. M. DAVIS & SON**  
P. O. Box 5, Palatka, Florida

## ARE YOU AWARE THAT

**OPPOSITION** to any permanent structure carrying on any principles of NIRA was voiced by 75 per cent of the machinery and allied products industry when they registered disapproval of the recent conference at Washington. Replies to a questionnaire sent 10,000 manufacturers, who employ over half of all workers in the manufacturing plants of the country, asking whether new legislation similar to NIRA should be enacted showed 82 per cent voting "no."

**PAPER AND PULP** imports to the United States have greatly increased. The classified imports for the first 10 months of 1935 and 1934 were:

	1935	1934
Imports	January-October	January-October
Newsprint .....	\$65,691,577	\$61,943,536
Other Paper .....	11,212,834	8,641,562
All paper .....	\$76,904,411	\$70,585,098
Paper base stocks .....	\$65,022,223	\$58,970,099
Woodpulp .....	55,214,706	50,627,386
Pulpwood .....	7,007,214	6,587,449

Most of the \$200,000,000 spent abroad for pulp and paper can be kept at home giving employment to Americans with the development of this industry in the United States. The South with its great pine resources is capable of supplying our paper and pulp needs which will add to the wealth of the entire country.

**APPROXIMATELY** \$6,000,000,000 of expenditures are needed to meet the present housing shortage. Although 800,000 residential structures have been built in the past five depression years, it is estimated that this falls more than 1,000,000 short of the number required to provide for the increased families, and an additional 500,000 units will be needed to meet the losses through obsolescence and destruction by fire and storm.

**GASOLINE** is now being produced in Great Britain through hydrogenation of coal in the first plant of its kind in the world. By this process 60 per cent of the coal by weight is converted into high quality motor fuel. Capacity of the plant is 54,000,000 gallons a year from the consumption of 600,000 tons of coal, giving employment to nearly 2,000 miners and about 2,000 additional factory workers.

**WORLD COTTON** consumption in the 1934-35 season was close to the largest on record, according to the Cotton Year Book of the New York Cotton Exchange just issued under the direction of Alston H. Garside, economist of the Exchange. It aggregated 25,428,000 bales compared with 24,760,000 bales average for the pre-depression period of 1925-29 despite the low level of general trade, industry and buying power in many countries.

**"SPEAKING PAPER,"** an invention of an Argentine engineer, was recently demonstrated in London. By means of this paper, it is possible to present a record of speech or music in as handy form as the daily newspaper. The system, called the Fotoliptofono, works on the principles of a talking picture. It is claimed that the invention will create a new industry, which will produce "speaking" books, sell the equivalent of 12-inch graphophone records and permit newspapers to print an actual record of a public speech or concert which readers can reproduce in their own homes.



**THE PETROLEUM INDUSTRY**, since its inception 76 years ago, has reduced the element of chance in the discovery of oil from 1,000 to one gamble to a ten to one chance, states the American Petroleum Institute. It places the total number of wells drilled at 870,000, and of this number 720,382 wells were completed during the last 34 years, with 330,000 wells now producing. The industry's steady improvement of drilling technique and equipment increased the possible drilling depth from 59 feet to three miles, thereby opening up new reservoirs and expanding the recoverable oil resources of the nation.

**WATER POWER** sites in Virginia to the number of 68, with a total capacity of 1,945,850 horsepower, have been described in a report issued by the Virginia State Planning Board, Richmond.

**STAINLESS STEEL**, which is being widely used in many industrial lines, is becoming increasingly popular for watch cases in beautiful never-tarnishing designs. It is being used in toys and about half of the nearly 1,000 toy plants in the country now make steel toys.

**AMERICAN FARMERS** will receive approximately \$7,800,000,000 in gross cash income, including rental and benefit payments, for 1935, with the Southern farmers' share being about \$2,730,000,000. Farm commodities are now about 83 per cent of their pre-war purchasing power compared with 55 per cent in 1933.

**ONE OUT OF EIGHT TONS**, or more than 12 per cent, of freight hauled by the railroads of the country is directly due to the activity of the steel industry in its use of iron ore, coal, limestone and other raw materials, iron and steel manufactures and finished products.

**IF JAPAN DOMINATES** North China she will have access to the development of a region that can produce within a few years all the raw cotton that Japan needs.

**EXPENDITURES** for bookkeeping, accounting, filling out tax forms and similar work averaged 2.3 per cent of the taxes paid by 163 representative corporations. In some instances the cost was above 25 per cent.

**BRAZIL** has supplanted the United States as the chief supplier of raw cotton to Germany.

**TRUCKING** of coal from mine direct to retail consumer outlets is estimated to amount to 20,000,000 tons annually from 19 States, 10 of which are in the South.

**BICYCLES** which can be taken apart, new parts substituted or the machine rebuilt in a few minutes with the aid of only a monkey wrench are now being made by a British company. The frame is of channel section steel similar to motorcar chassis construction and is in five parts bolted into simple waterproof brackets. It can be packed in a case only 26 inches square, the size of a standard wheel, thus effecting substantial reduction in the cost of transport.

**FERTILIZER CONSUMPTION** amounting to 3,950,000 tons for 1935 in the South is the largest in the past four years. The increase for 1935 is about 11 per cent over 1934 and 51 per cent above the depression low of 1932.

**RAILROADS** have greatly reduced the actual cost of moving freight in recent years. In 1921 the operating cost of hauling a ton of freight 1,000 miles averaged \$10.78 and in 1933, despite the volume of business was one-sixth less, the cost had been reduced to \$6.48 a ton.



Salt treated sub-flooring laid on Creosoted stringers and nailing strips, each treated by our Pressure Process.

## The Permanence of **TREATED WOOD** in Building Construction

Eliminate the need for expensive Replacements and Repairs by the use of Structural Lumber preservatively treated by our Pressure Processes with Standard, approved chemicals. Treated Lumber has many times the life of Untreated Lumber and will give a lifetime of satisfaction with low maintenance costs.

Detailed Information, Prices and, if necessary, the services of one of our Engineers may be had without cost to you, by writing our territory Sales Office or communicating direct with

### THE WOOD PRESERVING CORPORATION

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Pittsburgh, Pa.

AYER & LORD DIVISION

Affiliate

CENTURY DIVISION

NATIONAL LUMBER & CREOSOTING CO.

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Baltimore, Md. . . Boston, Mass. . . Charleston, S. C. . . Chicago, Ill.  
Columbia Park, O. . . Denver, Colorado . . Houston, Texas . . Kansas  
City, Mo. . . Marietta, O. . . Memphis, Tenn. . . Montgomery, Ala.  
New York, N. Y. . . Newport, Del. . . Philadelphia, Pa. . . Pittsburgh, Pa.  
Reed City, Mich. . . St. Louis, Mo. . . Superior, Wis. . . Texarkana, Ark.-Tex.

# « « LETTERS FROM READERS » »

## Government Competition and Private Investment

HENRY L. LEA  
Houston, Texas

EDITOR MANUFACTURERS RECORD:

In your November issue, I read an interesting letter from J. D. Rauch, Consulting Engineer, of the Lima Locomotive Works, in which he advocates large scale planting of tung trees in a number of Southern States. While I am glad to see one holding such an eminent position as he advocating the growing of tung trees for profit in the South, nevertheless, I am of the opinion that he is in error when he advocates the planting of 25,000 acre units and, that this be done by the Federal Government.

I speak as one tremendously interested in tung oil development. For the past several years, I have devoted a great deal of time to the study and observation of groves in several of the Southern States. After convincing myself that the crop could be produced successfully I then went to the Beaumont Chamber of Commerce and advocated that they get behind and push tung tree development in a part of their trade territory. As a result, there was held in Beaumont, on October 21st of this year, a Tung Oil Production Conference which was well attended, and from which we hope some progress in development will accrue.

My observation leads me to believe that the very large plantings will not be successful unless methods now used are materially altered.

In addition, I think it is about time for those of us who do not believe in the socialization of industry, and who chafe under government supervision by boondoggling bureaucrats to cease pleading with the Federal Government for funds to conduct what ought to be private business. Then too, in a matter of this nature, I think the rewards to be derived therefrom, should be widely distributed among many small farmers rather than have a few large concerns monopolize the industry.

It seems obvious to me that we must have a better distribution of opportunity in this country if our people are to enjoy the privilege of being self-sustaining. Monopoly in farming must never come. The bureaucrats in Washington must be returned to private employment, but we will never succeed in this so long as we continue to criticize the Government for interfering with private

business, while at the same time running to Washington for funds with which to develop industries that should be looked upon with favor by private capital.

H. L. LEA.

## Exchanging Naval Stores for Foreign Products

J. E. LOCKWOOD  
NAVAL STORES CONSULTANT  
Savannah, Ga.

EDITOR MANUFACTURERS RECORD:

Referring to your inquiry as to the report that naval stores companies have been "swapping" naval stores for foreign nails and metal products, Belgian cement, etc.

While I have no definite facts and figures, it is generally understood by the trade that barter of naval stores exported from this country, in exchange for foreign products received and sold in this country, has been practiced to some extent.

However, I question any material volume of such export transactions. But, in view of the material decrease in total exports of turpentine and rosin from the United States, and the increase in foreign production and competition for foreign markets, it is not surprising, that our exporters have had to use every proper means of holding our foreign markets. Apparently, even with such barter transactions to assist sales, our foreign trade has decreased to a material extent.

I am, therefore, concerned as to what action can be taken in respect to some method of increasing our exports of naval stores, and thus regaining, if possible, our former commanding position in the naval stores trade of the world.

J. E. LOCKWOOD.

## Helpful Service

KAUL LUMBER COMPANY  
Birmingham, Ala.

EDITOR MANUFACTURERS RECORD:

Your editorials and the articles you print reflect straight thinking and a courageous exposition of the facts relating to the political and economic problems of the Southern country. They are a valuable contribution, and we believe are appreciated by all who study them. Certainly we hear frequent commendations of the service you have rendered so helpfully for many years.

J. H. EDDY, Manager.

## Tung Oil Development

Atlanta, Ga.

EDITOR MANUFACTURERS RECORD:

I recently returned from a two weeks trip to Florida going as far South as Miami and spent considerable time in Orlando, Ocala, and the Gainesville section. It is most interesting to see the development going on in that state, particularly in tung oil. I had the pleasure of driving over the Bennett property near Gainesville which consists of over 2,000 acres in tung oil trees and it is a most inspiring sight.

We hope some day to have a property very similar to Mr. Bennett's to engage solely in the production of tung oil on a commercial basis.

P. BAYFIELD GIBSON.

## Serving Industry

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Middletown, O.

EDITOR MANUFACTURERS RECORD:

Our appreciation of your valuable service to industry is unbounded.

GEORGE M. VERITY, Chairman.

## Accurate Information

Roanoke, Va.

EDITOR MANUFACTURERS RECORD:

I have found the MANUFACTURERS RECORD and *Daily Construction Bulletin* beneficial and your reports are always accurate.

W. W. SPEARMAN.

## One of the Best

GROVETOWN LUMBER COMPANY, INC.  
Manufacturers of  
Rough and Dressed Lumber  
Grovetown, Ga.

EDITOR MANUFACTURERS RECORD:

We think you edit and produce one of the best papers in the United States.

J. L. KENNEDY.

## Factor in South's Development

THE REPUBLIC MINING AND  
MANUFACTURING COMPANY  
Bauxite, Ark.

EDITOR MANUFACTURERS RECORD:

We wish to take this opportunity to congratulate you on the excellent magazine which you put out. We feel that it is one of the factors which will help build an Industrial South.

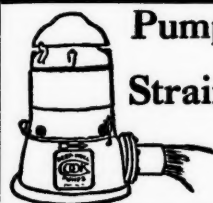
L. R. BRANTING, Superintendent.

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*Manufacturers of*  
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**Pumps—Deep-Well Plunger and Turbine**  
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Washed Sand and Gravel for Concrete  
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Filter Gravel, all sizes—Building Bricks

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Pomona is widely imitated but never successfully duplicated. Mechanical excellence and the use of highly developed materials assure longer life in Pomona Pumps. The cost of power is permanently less because of high sustained efficiency.

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costs no more than  
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Automatic sprinkler protection represents common sense applied to business.

Spread a sheet of water over your property, under which a fire cannot live, by installing automatic sprinklers. This equipment will save you 75% on your insurance premiums. The saving will pay for the sprinkler installation.

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FIRE PREVENTION



# INDUSTRIAL NEWS

## Sloss-Sheffield Appoints Sales Representative

Sloss-Sheffield Steel & Iron Company, Birmingham, Ala., announces the appointment of E. Arthur Tuttle, Inc., Room 1012, 52 Vanderbilt Avenue, New York, as Eastern Sales Representative for the sale of Sloss pig iron.

## Norfolk and Western Comptroller

I. V. Jessee, formerly auditor of disbursements of the Norfolk and Western Railway, has been made comptroller of the company to fill a vacancy caused by the death of J. C. Cooke.

## Alabama Towns Electrification

Following the recent completion by Alabama Power Company of 15.2 miles of line to serve 55 customers at Trenton and Princeton, Alabama, and along the highway from these communities to the company's line near Paint Rock, citizens of the district held a celebration to welcome the installation of electric service. Completion of this line brings the total of rural lines in Jackson County to 48.7 miles, and a total of 2357 miles in 65 of the 67 counties of the state operated by the Power Company.

## Charleston Shipbuilding & Dry Dock Co.

The Charleston Dry Dock Company of Charleston, S. C., changed its name, January 1, to the Charleston Shipbuilding & Dry Dock Company. These pioneer builders of all-welded ships date their work on this line back to the "Carolinian," which they inform the Manufacturers Record was the first all-welded ship to be built. It is expected that their All-Welded System of ship construction, on which they have patents, will engage a considerable part of their attention in the new set-up.

## Commonwealth Earnings

The full dividend requirements on the \$6 preferred stock of the Commonwealth & Southern Corporation were earned for the first time in two years when a net of \$6.03 was reported on 1,499,480 no-par shares for the 12 months ending November 30, 1935. The total net income was \$9,048,112 as compared with \$8,236,104 for the corresponding 12 months of 1934. The balance above the \$6 preferred stock requirements was less than 1 cent a share on 33,673,328 non-par shares of common stock.

## Mammoth Excavator In Service

Binkley Coal Company of Indiana has put the first of a new giant Bucyrus-Erie 950-B power shovel in service on its coal stripping operations near Terra Haute. By comparison with shovels that dug the Panama Canal, it is declared that three of the new 950-B machines could move the same amount of dirt in the same time that it required 90 of the largest excavators digging the canal to do it. The 950-B, with 45 tons dipper capacity, has actually 80 times the capacity of the  $\frac{3}{4}$ -yard 10-B, the smallest shovel in the Bucyrus-Erie line. It is available as a shovel or dragline, and is fully convertible for use with either type of front-end equipment. The unit is made by Bucyrus-Erie Company, South Milwaukee, Wis.

## Expanding Southern Business

Based upon their confidence in future possibilities of the South and the very gratifying manner in which their products have been received in that section, The White Company, Baltimore, Md., manufacturers of paints, varnishes and waterproofings, recently opened Southern branch warehouses, with local representation, as follows: Miami, Fla.—J. A. Wool, 1518 Drexel avenue, in charge, formerly with Bailey Milan, Inc.; Jacksonville, Fla.—M. F. Swint, 3322 Perry street, in charge, formerly with Pittsburgh Plate Glass Company; Tampa, Fla.—R. A. Law, 915 East Emma street; Norfolk, Va.—Edd Riddick, 408 West 13th street; Greensboro, N. C.—J. E. Oliver, P. O. Box 343, manufacturers' agent. In addition a number of local agents and distributors have been appointed. Plans of The White Company for 1936 contemplate further Southern expansion.

## Enlarges Houston Branch

The Southwest factory branch of the West Disinfecting Company, at Houston, Texas, has been enlarged by 10,000 square feet of floor space and the personnel increased. The Houston factory serves branch offices in San Antonio, Dallas, Fort Worth, Oklahoma City and Tulsa. The West Disinfecting Company, with its main factory at Long Island City, N. Y., clears approximately 48 carloads of its products through the port of Houston each year.

## Bliss & Laughlin Win Booth Display Prize

Attracting large attendance and widespread interest, the Purchasing Agent's Convention recently held in Chicago attributed its success not only to the general improvement in business but to an unusually fine display of manufacturers' products. The first prize for the most distinctive booth design and display was awarded to Bliss & Laughlin, Inc., of Harvey, Ill., for their exhibit of cold finished steel and shafting.

## Joins Carrier Corporation

The Carrier Engineering Corporation, Newark, N. J., announces the appointment of L. R. Boulware as vice-president and general manager, effective January 1. For the past eleven years, Mr. Boulware has been general sales manager of the Easy Washing Machine Corporation, Syracuse, N. Y. The Carrier Engineering Corporation is a pioneer in the manufacture and installation of air-conditioning equipment.

## Acquires Pipe-Making Company

The Concrete pipe Machinery Company, Sioux City, Iowa, manufacturers of Packer-Head concrete pipe machines and machines for producing underground conduit, recently took over the business of the former McCracken Machinery Company of Sioux City, which manufactures the same products. The newly improved Packer-Head machine makes bell-end and sewer pipe by the packer-head process which is internationally recognized as a superior method of making plain and reinforced concrete pipe 4 inches to 30 inches in diameter. R. M. LaDue will continue as general manager of the new company.

## Electric Air Heater Exhibit

The Electric Air Heater Company Division of American Foundry Equipment Company, Mishawaka, Ind., will exhibit its complete line of electric air heaters in Space No. 625 at the 4th International Heating, Ventilating and Air Conditioning Exposition to be held at Chicago January 27-31. Products to be displayed will include: Electromode Heater of the industrial type, Bilt-In domestic type and the portable unit, as well as electric heating grids or elements for other air conditioning work.

## Pennsylvania Pump Representative

Pennsylvania Pump and Compressor Company, Easton, Pa., announces the appointment of Consulting Engineering Company, No. 1 Terminal Office Building, Carson Street, Pittsburgh, Pa., as its representative in the Pittsburgh district.

## National Tube Appointments

J. E. Goble has been appointed vice-president in charge of sales of the National Tube Company, Pittsburgh, Pa., and W. F. McConnor general manager of sales. Mr. Goble was formerly manager of the export division of Oil Well Supply Company, New York, and Mr. McConnor was formerly assistant general manager of sales of National Tube.

## Machines Corporation Promotes Nichol

President Thomas J. Watson of International Business Machines Corporation, New York City, announces the promotion of F. W. Nichol, vice-president. Mr. Nichol, who has served as assistant to Mr. Watson, will assume the duties of general manager in addition to those of vice president.

## Small Capacity Positive Displacement Pump

To meet the need of a small pump to handle fluids at a relatively high pressure and at the same time in small quantities, the Homestead Valve Manufacturing Company, Coraopolis, Pa., has developed a miniature triplex plunger reciprocating pump which fills a gap between the mechanical lubricator type and the rotary centrifugal type. Depending upon the speed of the pump, the capacity may be varied from about 15 to 120 gallons per hour.

## To Direct Industrial Glass Sales

Owens-Illinois Glass Company, Toledo, Ohio, appoints William C. Davis, formerly of United States Gypsum Company, as director of merchandising for its Industrial Materials and Structural Materials divisions. Mr. Davis will set up a national sales organization to take care of demands for fibrous glass as an industrial material, and glass block.

**Worthington Bulletins.**—Worthington Pump and Machinery Corporation, Harrison, N. J., is distributing Bulletin W-101-B1A on Worthington Horizontal Duplex Piston Pumps, Type VC, for general services, and Bulletin L-400-B7 on Worthington Multi-Drive with Goodyear Emerald Cord belts.

**Jeffrey Catalogs.**—Catalogs recently issued by the Jeffrey Manufacturing Company, Columbus, Ohio, include the new Jeffrey 417 catalog devoted to materials handling equipment parts, including chains, sprockets, transmission machinery, conveyors, elevators and conveyor parts, etc.; catalog 615 on water purification and sewage treatment plant equipment, and the new Jeffrey-Taylor catalog 610 devoted to vibrating types of materials handling equipment.

(Continued on page 58)

# CENTRAL-IZE . . . for quality

Laboratory Guidance  
plus  
Mechanical Control  
plus  
Expert Supervision

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"CENTRAL"  
QUALITY  
STEEL

Billets ~ Plates ~ Sheets ~ Flanged and Dished Heads ~ Floor Plates ~ Stampings

IN STANDARD AND SPECIAL ANALYSES

**CENTRAL IRON & STEEL COMPANY...HARRISBURG, PA.**



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LYONORE FOR  
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METAL JOB**

Lyonore Metal is iron scientifically alloyed with Chromium and Nickel to make it extremely resistant to corrosion. It lasts years longer and costs less per year of service in any industrial application. Let us give you the facts.



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## **BELMONT IRON WORKS**

PHILADELPHIA NEW YORK EDDYSTONE

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*Engineers . Contractors . Exporters*

**STRUCTURAL STEEL  
BUILDINGS AND BRIDGES  
RIVETED-ARC WELDED  
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## **AUSTIN BROTHERS BRIDGE CO.**

Structural Steel and Ornamental Iron  
Bridges, Reinforcing and Guard Fence

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Chattanooga, Tennessee

*Structural Steel for all Industrial Structures,  
Buildings and Bridges.*

**LARGE STOCK FOR IMMEDIATE SHIPMENT**

## **Bristol Steel & Iron Works, Inc.** **STRUCTURAL STEEL**

**For Bridges, Buildings and All Industrial Purposes**

Steel Plate and Miscellaneous Iron Work  
Complete Stock Shapes, Plates, Sheets and Bars for  
Immediate Shipment

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"SAVE WITH STEEL"

## **STRUCTURAL for BUILDINGS STEEL and BRIDGES**

Capacity 1000 Tons per Month. 3000 Tons in Stock

**Carolina Steel and Iron Company**

*The Largest Steel Fabricators in the Carolinas*

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Sales Office: 709 Nissen Bldg., Winston-Salem, N. C.

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MOUNT AIRY**

**THE NORTH CAROLINA GRANITE CORP'N.**  
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**THE GEORGIA MARBLE COMPANY**  
*Producers and Manufacturers of*  
**GEORGIA MARBLE**  
TATE, GEORGIA  
Atlanta · Chicago · Cleveland · Dallas · New York

## **Northern Hard Rock Maple Flooring**

**BLOCK**

**Holt Hardwood Co., Oconto, Wis.**

**STRIP**

MEMBERS OF MAPLE FLOORING MANUFACTURERS ASSOCIATION

## INDUSTRIAL NEWS

(Continued from page 56)

**Waukesha Hesselman Oil Engines.**—Engine Bulletin No. 1000-D, the Waukesha Salesman, is being distributed by Waukesha Motor Company, Waukesha, Wis., to present a group of solid injection, spark ignition Hesselman oil engines, which are not offered by Waukesha as a substitute for compression ignition Diesel engines, but rather as supplementary to the Diesel on the broad basis of the best engine for given services.

**Arc Welders.**—The Hobart Brothers Company, Troy, Ohio, has issued a booklet under the title of "A Trip Through The Most Modern Factory in The World," which presents through text and illustration an idea of the facilities of the company for the production of high quality welding machines.

**Non-Sparking Tools.**—Elesco non-sparking tools, the use of which it is declared will prevent the emission of sparks, with possible fire or explosion, are illustrated and described in catalog 20,001-1, issued by The Superheater Company, New York and Chicago. Special hardening alloys are incorporated in Elesco cutting tools.

**Allis-Chalmers Literature.**—New literature now being distributed by Allis-Chalmers Manufacturing Company, Milwaukee, Wis., includes the following: Leaflet 2206, devoted to large low head double suction single stage Type S pumps; leaflet 2207, to large high head double suction single stage Type S pumps; leaflet 2208, to small double suction single stage pumps, and leaflet 2210, to Type M Multi-stage double suction pumps.

**"Properties of Toncan Iron."**—The foregoing is the title of a 12-page folder issued by the Republic Steel Corporation, Cleveland, Ohio, on rust-resisting Toncan Copper Molybdenum Iron, two important sections presenting complete physical properties and physical constants on this corrosion-resisting alloy iron.

**Portland Cement Stucco.**—The Portland Cement Association, Chicago, is distributing a revised edition of "Portland Cement Stucco" to "present briefly and pictorially, good practice in the preparation, application and decorative possibilities of Portland cement stucco," as applied to either old or new buildings.

**Arc Welding Design and Practice.**—Intended for the use of engineers, designers and welding users, the third edition, greatly enlarged, of the "Procedure Handbook of Arc Welding Design and Practice" has been issued by The Lincoln Electric Company, Cleveland, Ohio. The volume contains 586 pages and more than 700 illustrations. It is priced at \$1.50 postpaid in the United States, with 50 cents extra for foreign postage.

**Stainless Steel.**—A new booklet prepared by Joseph T. Ryerson & Son, Inc., Chicago, Ill., published in seven colors, describes the beauty, popularity and enduring radiance of stainless steel, while illustrating dozens of stainless articles and showing applications of Allegheny Stainless Steel in all lines of industry.

(Continued on page 69)

**PROFIT BY OTHERS MISTAKES  
AND TAKE ADVANTAGE OF**

**UNDERWRITERS APPROVED FIRE PROTECTION**

That there are many real advantages in addition to the large insurance saving, is shown by installations already made in practically every type of business house, factory and residence. INQUIRIES are invited on your fire protection needs.



**JONES  
AUTOMATIC SPRINKLER CO.**

**FIRE PROTECTION**

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**PLAINS, GA.**

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**Model Land Company**

*Flagler System*

**St. Augustine, Florida**



# **The Arundel Corporation**

## **BALTIMORE, MD.**

**Constructors and Engineers**  
**Distributors of Sand-Gravel-Commercial Slag**

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Our complete organization with years of experience in successfully executing large construction contracts of various kinds is prepared to undertake the construction of earth, masonry and concrete dams, drydocks, dredging of all kinds, river and harbor improvements, deepening channels, hydraulic filling and rock work, tunnels, railroad construction, sewers and waterways.

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W. BLADEN LOWNDES, Vice-President  
JOHN T. DAILY, Secretary  
RICHARD A. FROEHLINGER, Treasurer

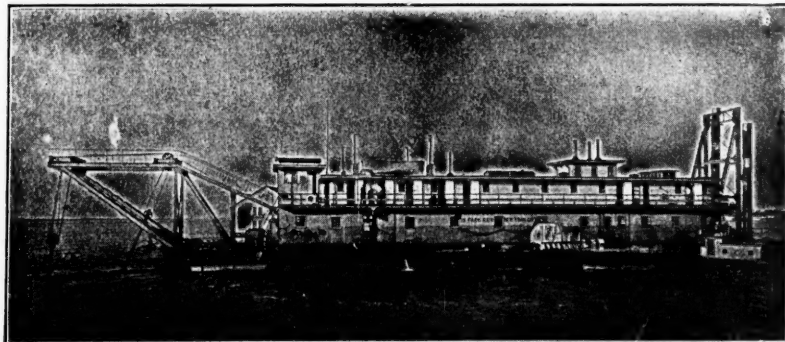
E. L. WADE, Assistant Secretary  
J. N. SEIFERT, Assistant Treasurer  
C. W. BLACK, Chief Engineer  
HOWARD O. FIROR, General Supt.

**MAIN OFFICE:** Arundel Building, Pier 2, Pratt Street  
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**FILLING, LAND RECLAMATION, CANALS, PORT WORKS**  
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**We are especially equipped to execute all kinds of dredging, reclamation and port works in Southern waters.**

**Correspondence invited from corporate and private interests everywhere.**

*Contractors to the Federal Government*

## **ATLANTIC GULF AND PACIFIC CO.**

**NEW YORK: 15 Park Row**

**HOUSTON, TEXAS: Scanlan Building**

## Modernizing Plant

**O**PERATING practically continuously for 81 years, The Hackney Wagon Company, Wilson, N. C., recently reorganized and incorporated by T. J. Hackney, president and general manager, and John Hackney, is modernizing its plant to more efficiently take care of a production of 12,000 wagons per year capacity.

Beginning in a little shop in 1854, the business expanded until a 14-acre site was occupied by storage houses, rim-bending plant, wheel and spoke rooms, blacksmith shop and other necessary units for the production of high quality, long wearing wagons for farm and industrial purposes.

In keeping with modern manufacturing practices, the present management is reassembling machinery and equipment to effect greater economy in production and handle a volume of business which has been growing since the low point of the depression in 1932.

## Du Pont's Charlotte Branch in New Quarters

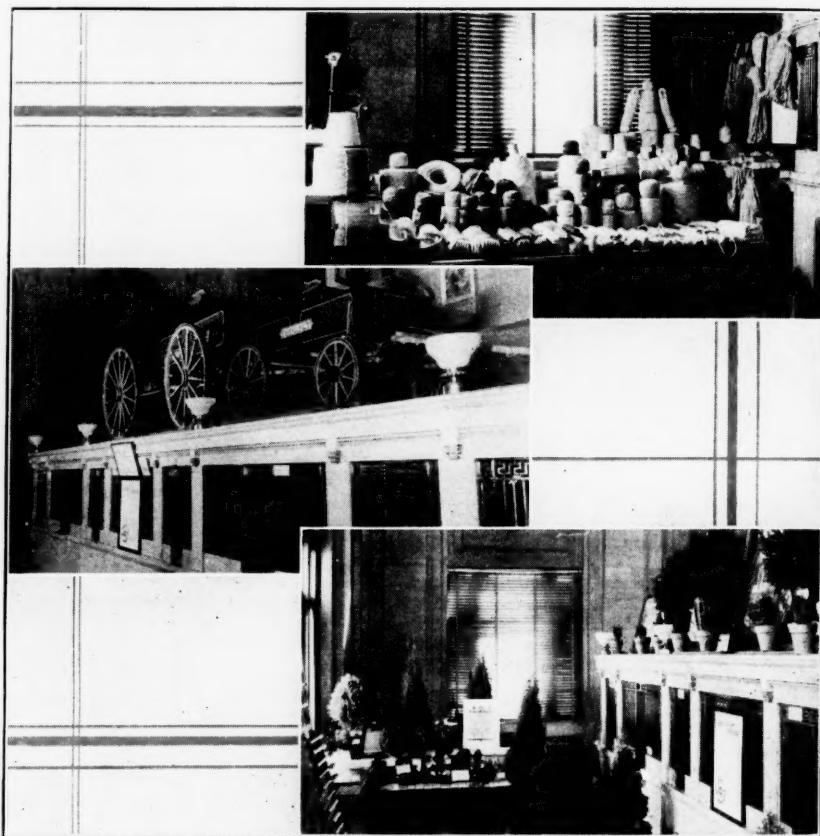
**T**HE Charlotte, N. C., branch of E. I. duPont deNemours & Co., has been moved into new quarters in the Duke Power Building. Completely remodeled, air conditioned and provided throughout with a level of illumination of 20 to 35 foot-candles, the new location affords modern offices, warehouse and laboratory space for seven departments of the Du Pont organization. Ample railway and truck

Modern Air-Conditioned Office of the Du Pont Co.'s New Branch Facilities in the Duke Power Building, Charlotte, N. C.



loading facilities expedite the movement of all materials.

The Organic Chemical Department handles dyes and fine chemicals, while the Grasselli Chemical Company handles heavy chemicals for the textile industry. The R. & H. Division serves the textile industry in all bleaching processes. The duPont-Rayon Company supplies viscose rayons while the Acele Division supplies acetate silks. The Explosives Division handles explosives for mines, railroads, and all types of construction work.



Exhibits in the First National Bank, Hickory, N. C. Top—Rope, cordage and twine, Shurford Mills. Center—Piedmont Wagon Works. Bottom—Howard-Hickory Nursery

of industry, as the Duke Power Magazine says, and it likewise shows what can be accomplished through cooperation of business interests in constructive publicity.

Among concerns which have been represented in the displays during recent weeks are: Piedmont Wagon Works, Hickory Overall Co., Latta Martin, Hutton & Bourbonnais, Hickory Novelty Co., Southern Desk Co., Howard-Hickory Nursery, Hickory Weavers, Elliott Hosiery Mills, Shurford Mills, Sipe Orchards, Hickory Chair Co., Brookford Mills, and other varied interests.

The General Box Company, Louisville, Ky., makers of wooden boxes, crates, and other wooden products has installed new modern equipment for the manufacture of corrugated boxes.

## Serving the Community

**T**HE First National Bank, Hickory, N. C., has been performing a real community service by making the people acquainted with the manufactured products of the city. Through the cooperation of local manufacturing establishments exhibits of their products have been displayed in the lobby of the bank and they have attracted wide attention of local people and visitors to the city. It emphasizes the importance



Exceptionally heavy traffic on this Columbia, Mo. street, yet not one cent of maintenance cost in 29 years service.

\$0.0089 per sq. yd. annually during 44 years service—Columbus, O.  
 \$0.0000 per sq. yd. during 29 years service—Columbia, Mo.  
 73 blocks maintained 20 years for total cost of \$12.75—Russell, Kans.  
 Buffalo, N. Y.—40 year average of all brick less than \$0.01 per square yard annually.

### SOME BRICK PAVEMENT Maintenance Costs

ONE fact about modern pavements is definitely established. And that is—brick has the lowest upkeep costs. By far the lowest. Above are actual figures on brick. Only brick pavements can turn in maintenance records like these. And again, in the U. S. Bureau of Roads, long-time experimental test (Chevy Chase) brick maintenance costs are by far the lowest. The reason for this brick supremacy is that brick resists weather damage as well as traffic wear. Resurfacing many types of worn pavement with brick is a growing practice. On old or new pavements, brick pays for itself in a very short time. For further information address National Paving Brick Association, National Press Building, Washington, D. C.

*Wherever  
are kept...* **Records**

## BRICK COSTS LESS PER YEAR

EXHIBITOR: Highway Exhibit, American Road Builders Association, January 20-24, Cleveland, Ohio.  
 30th Annual Meeting National Paving Brick Association at Columbus, Ohio, January 29, 30, 31, 1936



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Four Quarries

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ASPHALT FILLER DUST



American Limestone Co., Knoxville, Tenn.



# Opportunities for Chemical Industries in the South

(Continued from page 27)

of idle lands could be of utmost economic value in the growth of America. Power alcohol of organic origin would consume annually the output of 21,000,000 acres; pulp and paper products from 8,000,000 acres; vegetable fibers from 5,000,000 acres; flaxseed and linseed 3,500,000 acres; cotton for road construction 3,000,000 acres; plastics 3,000,000 acres; soybean oil and plastics 2,500,000 acres; tung oil 1,000,000 acres; tanning materials 500,000 acres; starch 500,000 acres.

## Glass In New Fields

Who could imagine a few years ago that one might sleep on a mattress as comfortable as a feather bed, but made of glass; who could imagine that glass could be made into threads so fine that it could be woven into cloth or mixed with rubber and other materials for use in innumerable industries; who could imagine that glass could be made into rope, in all appearances like any other rope; who could imagine that glass could be made into a wool filled with so much air that it could be used for insulating, and who could a few years ago have imagined that we could live in glass houses, which would allow sunlight to diffuse to provide better daylight and more desirable daylight,—and who could realize that our safety glass would be made from the pine tree.

Manufacturers seem to be awake to the many possibilities for the use of glass, particularly in the chemical industry. Glass is having an ever widening field in linings for heavy iron and lead and steel equipment. Glass tubes of a variety of sizes are used in transporting chemicals.

## Materials At Reasonable Cost

All these products are now available, as the result of the chemical technologist. But how about the use of these glass products? They cannot be used if they are too costly. Low cost production will depend primarily upon the cost of raw materials the cost of fuel and upon the cost of assembling the raw materials used in the glass industry, such as the alkalis, the feldspars, limestones and dolomites and of course upon available supplies of high grade silica sand. The recent establishment of alkali plants in the South, with plants in the Tennessee and Virginia area, in Louisiana and Texas make possible the supply of alkalis at most any point in the South at a reasonable cost. All of the materials used in the glass industry

are found in the South, and low cost natural gas and the advantages of transportation facilities both by rail and water afford an excellent opportunity for glass production.

Alkalies and acids are the active chemical agents used to purify so many raw material products and to combine with other chemicals to form the products which are the basis of the chemical industry.

The well known salt deposits of Louisiana and Texas and the potash deposits of New Mexico and Texas afford the raw material alkalies and sulphur from these States supply the raw materials for the low cost production of the acids, hydrochloric and sulphuric, and for the production of liquid chlorine.

## Available Potash Deposits

The potash deposits of Georgia are as yet little known. The writer has already determined that these deposits could provide potash for not only the fertilizer industry, but for the alkali industry. It is even possible that these potash shales might be transported to the alkali plants of the South because of low cost of natural gas, because of the close association of salt and limestone, the raw materials used in the recovery of potash and because of the availability of low cost acids. More than a thousand tons of potash have been commercially made by the writer from these Georgia shales, with a recovery of about 97 per cent of the potash as a result of the volatilization of a part of the potash as the muriate and the availability of the rest of the potash in acid soluble and water soluble form and by concentration by the usual processes into concentrated salts.

Liquid chlorine will soon be manufactured by a new process at Hopewell, Va. The use of liquid chlorine in the sterilization of sewage and in the purification of water has an ever widening field as well as for use in the bleaching of pulps and for the manufacture of paper.

The application of the use of activated carbon for air purification in air conditioning indicates a great lowering of cost.

Just as remarkable, as has been the progress made in the development of new products, has been the progress made by the manufacturers of machinery for the processing of chemicals. The development of acid resisting materials; drying and dewatering chemicals in the filter press and with the centrifuge; the grinding of materials, both dry and wet and air separation; instruments for recording almost every action of heat and cold; filling containers; air condi-

tioning; dust collecting and improvements too numerous to mention.

Refractories and refractory cements; filtering materials, pigments and many other materials should not be passed over lightly. The Chemical industry is not standing by.

## As History May Record the Events of 1936

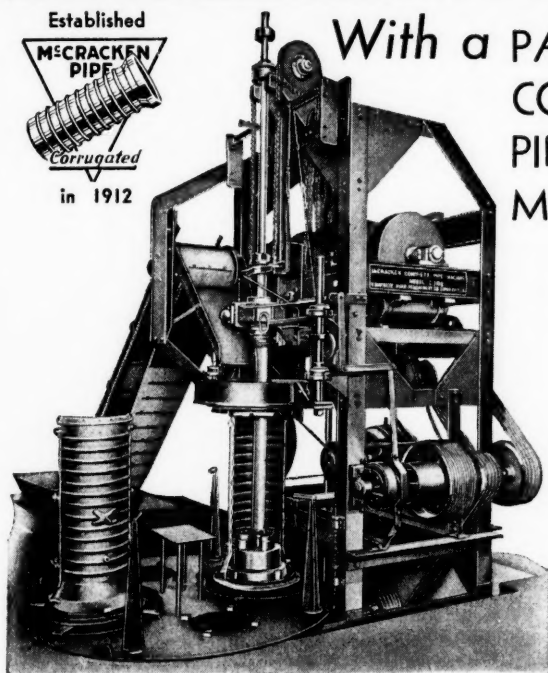
George P. Torrence, President of Link-Belt Company, in the January issue of *Link-Belt News* says:

"In the days of the great depression, Uncle Sam had given lavishly to aid the suffering members of the family. The impression got around in the family that Uncle Sam was a Santa Claus and had a source of income outside the income of the family, and that what he spent from this magic source did not effect the family. Fortunately, it 'leaked out' that Uncle Sam would have to ask all members of the family to pay for what he was spending, and that there was no magic source.

"1936 proved to be favorable for Uncle Sam's family. The members of the family were greatly interested in what was happening. They did a great deal of talking about what ought to be done, and then told their representatives in Congress and in the state legislatures, what they wanted; and the representatives took the necessary steps. Financial disaster was averted by compelling Uncle Sam to stop playing Santa Claus. Uncle Sam rather liked playing Santa Claus, and the members of the family had some difficulty in persuading him that there was no need for such lavish spending, especially as they would have to pay for it later on. Uncle Sam, no longer a Santa Claus, gave back their responsibilities and duties to local authorities. A start was made in moving Uncle Sam out of the manufacturing and selling business; and further experiments, and further attempts to legislate prosperity, were stopped. This required firm handling, because Uncle Sam thought he knew better than the family. Attempts to take property from those who had it, just because Uncle Sam was sorry for the less fortunate or less industrious, was also stopped. When the family knew that the property of members of the family was safe again, confidence returned, business increased, and prosperity based on profitable private activity became a reality and replaced the false prosperity based on Uncle Sam's spending.

"In the fall, the family re-elected or elected representatives and government officers who promised to preserve Uncle Sam's family by adhering to the old system that the family knows how to operate and make successful. The family did not elect those who wanted Uncle Sam to experiment with untried or dangerous theories of government and business . . . which might destroy local self-government, personal self-reliance, thrift and the very existence of Uncle Sam and his large and increasingly prosperous family."

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VERTICAL

SEND FOR CATALOG  
Manufactured By

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## Real Estate and Construction

(Continued from page 25)

5. We are studying scientific real estate management with an intensity unknown even two or three years ago, a factor that will immeasurably stabilize earning power of large-scale projects.

6. Real estate is gaining a more equitable tax situation. In seven states alone reduction of the real estate tax through modernization of the tax system totals nearly a quarter billion dollars annually.

7. Discount facilities for urban mortgages have been widened for limited groups of lending agencies and for limited types of mortgages. But to assure stabilization of our mortgage structure there is urgent need that we set up a central agency that can give discount facilities in a comprehensive way to urban mortgages. Such an agency is provided in the Fletcher Bill (S. 2914) now before Congress. In this measure industry should have profound interest. It can have no stability beyond the stability we give our long-term credit structure.

8. A shortage of residential space is approaching. The best informed estimate I know places present residential vacancy, including all units, houses and apartments, at between 3½% and 4½% for most cities of the United States. In city after city over the country practically every habitable single-family house is occupied.

9. Commercial space is filling up. Already good shop locations show few vacancies in many cities.

10. As vacancies disappear, rents are definitely and very generally advancing. The rise came first and has gone farthest for single-family dwellings. Rates for major metropolitan cities over the country are at over 80% of the 1926 level. For apartments they are still at about 56% of the 1926 level. For commercial space leasing terms are stiffening.

11. Volume of real estate sales and level of real estate prices are definitely rising. Volume of sales as shown in quantitative reports from over 25 major cities over the country is now 51% of the 1926 level. And 1926 was a very fine "real estate year."

12. Private construction, which had fallen to 95% below normal as its depression low point is still 87% below normal.

We hear much about the fact that home building for recent months has been proceeding at 150% of the 1934 rate. But 150% of zero equals zero, and at 150% of our 1934 rate we built in the first ten months of 1935 only 66,261 dwelling units, according to a Home

Loan Bank release of Labor Department figures. One measure of what this means: Families in the United States are increasing at the rate of 360,000 annually, five times the rate that new residential building has yet attained. We are now building new family accommodations at the rate of 4½ family accommodations per month for each 10,000 families of our population, according to studies made for the National Association of Real Estate Boards. At the lowest point of the depression period we were building approximately 2 family accommodations per month per 10,000 families, for the entire United States. In 1925 we built an average of 36 family accommodations per month per 10,000 families, and we did this not for any peak month, but as an average for the entire year.

### Prospect for New Construction

What of the prospect for return of new construction in the year ahead? To get at the answer we must add this factor to the above list:

13. Building material costs are at approximately 86% of the 1926 level.

The critical factors affecting new building are those numbered 10 and 13 above, the factor of building income and the factor of building costs. A glance at the figures will show that on the chart of American business the line which represents the earning power of existing structures is rising and approaching the line which represents cost of building construction.

When the line of income crosses and climbs above the line of construction costs we shall have our signal, the signal, I believe, of a switch to full recovery. The most accurate prediction which can be made as to when new private construction can be expected in volume is, I believe, this: It will come at *whatever time it becomes clear to the public generally* that rents to be expected, or earnings to be expected, are above the *then* level of construction costs.

### More Building in 1936

New home building we certainly shall have, estimates varying from 50 to more than 100% increase in residential construction. Some modernizing of commercial structures and some new industrial building we shall have. Industrialists are beginning to survey the possibilities of increasing their earning power by plant revision or expansion. Far-seeing industries who can do so are safeguarding their future by taking advantage of present real estate prices, certainly the lowest we shall see for more than a decade at least, to purchase their own business homes.

Meantime, I believe that in planning

commitments for the year ahead, be they preparation for investment in real estate, preparation for the coming of eventual new construction, or preparation in relation to the general business outlook, we should all of us do well to keep in mind that delay in the opening of new construction (as will happen if building costs rise) will pile up demand for existing structures and so add to value of existing real estate.

## Coordinating Rail and Highway Service

(Continued from page 28)

tions with a newer and better form of equipment.

These cars are 57 feet long, and on the Electric Division, seat 57 passengers with a mail and express compartment approximately 13 feet long. The weight without passengers or freight is approximately 42,000 lbs.

The car is a mechanical drive powered with a 180 horsepower Hall-Scott engine of the pancake type hung into the under framing of the car below the floor. All power and transmission equipment is below the floor and gives a 100% payload for the car space. The material is Cor-ten steel and aluminum. The fuel is gasoline and the consumption is from 4 to 5 miles per gallon, depending on the service. The gasoline costs approximately 1½c per car mile for fuel.

The train costs of operation on the Electric Division for the months of June, July and August were 18.6c per mile, exclusive of interest and depreciation. It is estimated the average train costs for the year including interest on the investment and depreciation will approximate 22c per mile.

On the Electric Division it appears that the saving over the former electric car operation will exceed \$30,000 per year and the cost of two of these cars to replace eight of the old motor cars was approximately \$25,000 per car delivered at Norfolk.

It is too early as yet to determine the increase in revenues by the change, but it is believed it will be effective in returning considerable business to the rails and permit an effective coordination between this service and the Company's highway operations. As the Rail-buses are capable of 65 miles an hour they equal the highway equipment in running time between intercity terminals including the transfer, and the fares are the same. It is believed growth of transport, therefore, by development of the territory will result in increased low cost rail service instead of greater highway congestion. It will require time to determine the public's reaction to this form of coordination.



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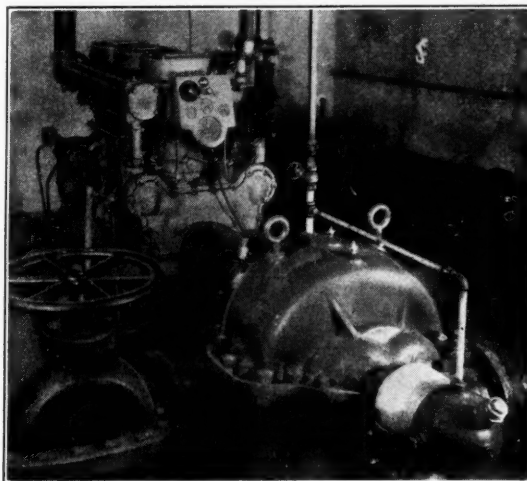
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## ALLIGATOR TRADE MARK REG. U.S. PAT. OFFICE BELT CUTTER



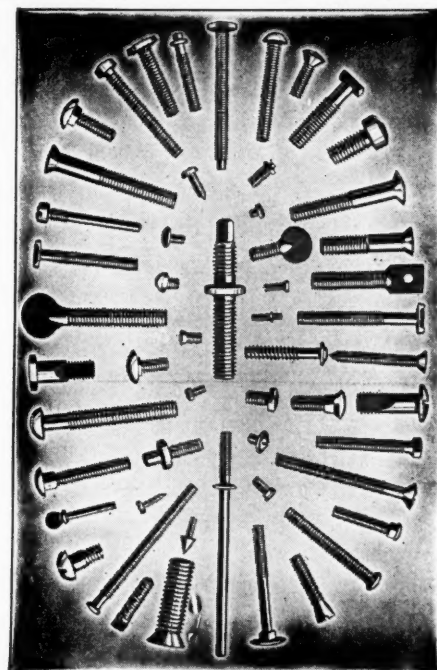
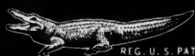
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## Cottonseed Industry

(Continued on page 23)

ducts are now being crushed by a number of the mills in the South. There is to be held a soy bean conference in Corsicana, Texas on January 14th and 15th, for the purpose of discussing the future possibilities in growing soy beans for the manufacture of oil, which with the proper protection from foreign competing vegetable oils, could be developed into a large industry.

There is at present, being imported into this country, foreign oils and fats to the value of approximately \$100,000,000 annually, and practically all of these foreign products can be substituted at home with peanut and soy bean oil.

Soy beans are grown extensively throughout the cotton and corn belts of the United States, and their production can be increased to an almost unlimited extent. It is possible, therefore, that within a few years, the cotton oil mills by utilizing soy beans, will be able to operate their plants the entire year, rather than from four to six months, as is now the custom in crushing the available supply of cottonseed.

### Need for Market Information

The highly speculative nature of the

cottonseed crushing industry is further complicated by the fact that neither the mill operators, the ginners who are the middlemen for cottonseed, nor growers have any means of knowing the price of cottonseed over a broad territory, or in all of the markets accessible to them. This is because there is no reliable price reporting service which collects and distributes prices on cottonseed and cottonseed products. We read in the daily papers, the market price of wheat, corn, oats, peanuts, and many minor products of agriculture. However, there is no such service maintained for cottonseed, the value of which is approximately \$150,000,000 or more, annually. As a result of this lack of market information, sometimes the price of cottonseed will vary as much as 40% to 50% in different localities.

There is now an urgent demand being made by the public, upon the United States Department of Agriculture, for the publication of authenticated market information covering cottonseed. The Bureau of Agricultural Economics is making a careful study of this subject, and it is possible that cottonseed will soon be included along with the other leading agricultural products, in the daily and periodical price reports now being published.

## Cotton Textile Industry

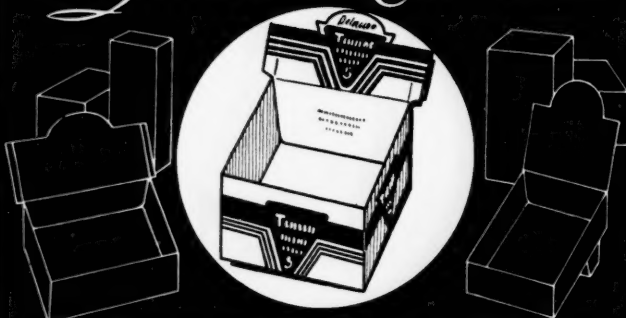
(Continued from page 22)

many seemingly tempting phantasies to pull them away from a spirit of cooperation, have stoutly maintained a strong production position. They have gone through what may be termed an endurance contest and business has seemed to be just ready to come in with a possible profitable period, but this picture is darkened by the shadow of this 10% who seemingly think they can hasten their success by acting as individuals rather than acting with the group.

In a final word, the new year looks inviting, it looks better than 1935, and in my humble judgment, will be a better year, provided mills stand together 100% on certain fundamental industrial policies with reference to wages and hours and, provided, further that certain questionable laws now existing on the statute books are clarified and those new and untried principles which are now in the congressional hoppers are burned to ashes and then sifted to the winds.

**Lukens Nickel-Clad Steel.**—Lukens Steel Company, Coatesville, Pa., has issued a 24-page booklet on Lukens Nickel-Clad Steel—a bi-metal consisting of a light layer of pure, solid nickel permanently bonded to a heavier layer of steel.

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**GEARS**



## Fertilizer Sales Gain

(Continued from page 23)

farm income is an important factor in the outlook for fertilizer sales.

As farm income rises an increasingly large proportion of such income becomes available for purchases of fertilizer, equipment and other items. This is due to the fact that many items of expense, such as interest and taxes, are more or less fixed, with the result that the amount available for commodity purchases is much more variable than is total income. There is also a cumulative effect of rising income on farmer purchasing, an effect which has been felt to a considerable extent during the past year. As income first begins to rise it is used to take care of pressing obligations and to liquidate indebtedness incurred during the preceding depression. The full force of rising income is not felt by industries selling to the farmer until some time after the rise has started.

One of the most successful, helpful and constructive codes under NRA, judged from the standpoint of consumer and producer, was that of the fertilizer industry. Under the code many practices inimical to the interests of the

consumer which had crept into the industry over a period of years were eliminated. The invalidation of the codes by the Supreme Court in the Schechter decision made some form of industry self government which would prevent a return of former unfair competitive practices seem desirable. Consequently at the annual convention of the industry which was held in June plans were initiated looking towards the adoption of fair trade practice rules.

Such rules provide for consumer protection as well as the elimination of unfair competition. The rules are designed to prevent such practices as giving out misleading price information, granting of rebates, defamation of competitor, misbranding, false and misleading advertising and price discriminations.

### FERTILIZER CONSUMPTION IN THE SOUTH

(Tax Tag Sales in 12 States)

Year	Short Tons
1926	5,093,174
1927	4,499,488
1928	5,515,649
1929	5,458,078
1930	5,554,690
1931	4,051,407
1932	2,617,344
1933	3,135,172
1934	3,549,308
1935	3,592,901

## South Builds for Permanency

(Continued from page 24)

treatment plants of concrete construction.

In Florida the Atlantic to Gulf Canal gets under way, and locks and bridges take shape in concrete. A gravity type sea wall is built to protect Bayshore Drive in Tampa. At Pensacola, 18 new structures are under way for the Pensacola Naval Air station. At Cape Fear River, N. C., plans call for a \$4,000,000 port at Southport. And back to Texas where the beautiful stucco walls of the Texas Centennial Administration Building are mirrored in the surrounding concrete pools.

As we look at inadequate houses, at slums, at rivers still out of control, at uncompleted highways, at the flow of fertile soil from the land, at the destruction by insects, by fire, by storms it is with no little pleasure that developments of the year are visioned as a trend to a more permanent South.

**Duro-Brace Texsteel Sheaves.** — Allis-Chalmers Manufacturing Co., Milwaukee, Wis., has issued a revised 16-page Bulletin 2188A to include its complete recently extended line of Duro-Brace Texsteel Sheaves for stock drives up to 15 horsepower.

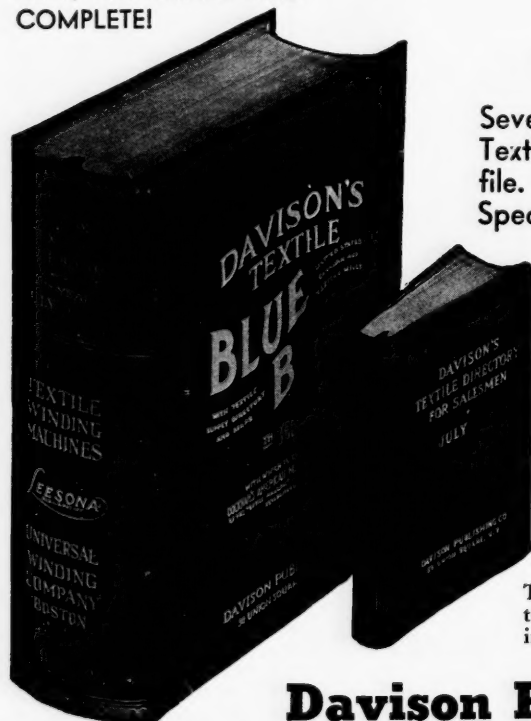
# 70<sup>TH</sup> YEAR BLUE BOOK

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**T**HE NEW 70th ANNIVERSARY TEXTILE BLUE BOOK is not new in a superficial way. It is new in the essential things that count in a complete guide to the nation's second largest industry—TEXTILES; new from cover to cover in all its fifteen hundred pages—new items and new mill reports—new information on some twenty-five thousand dealers in Allied Lines—new in up-to-date information on markets you can sell with profit—new in giving thousands of sources where you can save in buying. Old books are obsolete, expensive to use and unreliable due to an enormous number of changes, all incorporated in THE NEW 70th ANNIVERSARY

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"Standard Textile Publications Since 1866"

Cable Address "DAVITEX" Phones, STuyvesant 9-1195-1196

# INDUSTRIAL NEWS

(Continued from page 58)

**Tractors.**—Allis-Chalmers Tractor Division, Milwaukee, Wis., is distributing a bulletin devoted to Allis-Chalmers "K" and "W-K" gasoline crawler tractors, designed and built for heavy duty service on earth-moving, legging, farming and industrial jobs.

**Friction Material.**—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J., have issued a new catalog describing their complete line of Condor Industrial Friction Materials, with technical data on nine Condor types.

**Wheelbrator Tum-Blast Cleaner.**—American Foundry Equipment Company, Mishawaka, Ind., has issued Book No. 111, illustrating and describing the American Wheelbrator Tum-Blast Cleaner, a unit combining the American Tum-Blast Cleaner which was introduced to the foundry industry seven years ago, and the American Wheelbrator—airless abrasive cleaning device.

**"Houston."** — The December number of "Houston," official publication of the Houston Chamber of Commerce, presents a number of interesting news and editorial articles which show the substantial industrial progress of that business center of Texas.

## Plaskon Company Changes Name

Toledo Synthetic Products, Inc., makers of Plaskon, colorful urea molding material, announces a change in name effective January 1st, 1936. The new name of the company is Plaskon Company, Inc.

## Calendars for 1936

Calendars for 1936 coming to the office of the MANUFACTURERS RECORD include the following from: Byron Weston Company, Dalton, Mass., makers of a complete line of ledger and bond papers; The Jaeger Machine Company, Columbus, Ohio, manufacturers of construction and road machinery and repair parts; Shane-Beever Company, Baltimore, electrotypers; Baltimore Commercial Bank; Gulf Refining Company, Pittsburgh, Pa., petroleum products; General Electric Company, Schenectady, N. Y., electrical equipment; Link-Belt Company, Chicago, Ill.; Pennsylvania Railroad; Meyer & Thalheimer, Baltimore; O. F. H. Warner & Company, Inc., Baltimore; Baltimore Electric Blue Print Company; A. W. Harrison & Sons, Inc., Baltimore, engravers; Hercules Powder Company, Inc., Wilmington, Del.; The F. E. Myers & Bro. Co., Ashland, Ohio,

pump manufacturers; International Harvester Company, Chicago, Ill.; The Cooper-Bessemer Corporation, of Mt. Vernon, Ohio.

## Wire Cloth Guards for Safety

It is commendable practice, for the sake of safety, to place guards around dangerous moving machinery. In many instances guards are required by law. Guards made of high grade wire cloth have these advantages:

They are transparent, allowing the details of the guarded machine to be "seen" without difficulty; do not hinder or deflect air currents, which is important in the case of electric motors that are likely to heat where ventilation is poor; can be made strong enough for any guarding purpose; light in weight, hence can be removed and handled without difficulty, and they are easily made. The fact that wire cloth can be bent to almost any desired shape is important. Thus for some enclosures a single joint often suffices. Stiff wire cloth is self-

supporting and seldom requires additional or intricate frame work.

An easy and excellent way in which to make wire guards for almost any purpose is to make the frame work out of angle iron and the sides out of wire cloth of suitable mesh.

Angle iron is not easily bent without cutting on portions of the flange. That is, cut out a "V" angle equal to the bend wanted, from the inner flange where the bend is to be made.

After the frame is formed, put in the wire cloth or screen. The quickest way to fasten the wire in place is via the welding torch. The same torch may be usefully employed for welding the frame work together. Simply "spot weld" the wire terminals in place on the inner flange of the frame. If no welding outfit is available the wire may be either riveted or bolted in place. Punch holes through the inner flange at the wire terminals and then rivet or bolt. When carefully made entirely of metal, a guard should last indefinitely.



# BIRMINGHAM

## ALABAMA



**250 OUTSIDE ROOMS**  
**250 BATHS with SHOWERS**  
**RADIO IN EVERY ROOM**  
**CIRCULATING ICE WATER**  
**IN EVERY ROOM**  
**AIR CONDITIONED**  
**COFFEE SHOP**

**FRANK (PETE) WOODS, Manager**  
**A. P. REICH, Managing Director**

**BIRMINGHAM'S MOST MODERN HOTEL**

# HOTEL REDMONT



While cosmopolitan in its general appeal, and modern up to this moment in its equipment, there is a peculiar flavor of The Old South here which Southerners are quick to note and appreciate. They feel at home and come back to us again and again.

*Rates \$3.00 per day and up. Every room with bath or shower. Centrally located.*

## The Southern Hotel

BALTIMORE

## FLORIDA HOTELS THAT PLEASE

*Modern—Reasonable Rates*

<b>TAMPA</b>		<b>MIAMI</b>
The Floridan	The Tampa Terrace	The Alcazar
		The Halcyon
<b>LAKELAND</b>		<b>WEST PALM BEACH</b>
The Lakeland Terrace		The Dixie Court

OPEN YEAR 'ROUND

<b>SARASOTA</b>	<b>BRADENTON</b>	<b>WEST PALM BEACH</b>
The Sarasota Terrace	The Manatee River	The Royal Worth

*Open December to April 15*

## FLORIDA COLLIER COAST HOTELS

*"Hosts of the Florida Coasts"*

# RESALE DEPARTMENT

## MACHINERY EQUIPMENT SUPPLIES

### FOR SALE

#### 1—Vert. Electric Generator

2400 volts, 60 cycles, 3 phase, 85 kva., 200 r.p.m., P.F. 1.00 Cont. Vertical Shaft Type Z Lefel, size 24", 120 rated hp., 9 to 13 ft. head water wheel. Belted Exciter E. M. Co., 125 volt, 6½ kw. One 2500 ft. lb. Woodward Governor.

#### 1—Vert. Electric Generator

2400 volts, 60 cycles, 3 phase, 165 kva., 150 r.p.m., P.F. 1.00 Cont. Vertical Shaft Type Z Lefel, size 33, 230 rated hp., 9 to 13 ft. headwater wheel. Belted Exciter E. M. Co. 125 volt, 11 kw. One 3000 ft. lb. Woodward Governor.

#### 1—4 Panel Switch Board

with Breakers, Instruments and Voltage Regulator.

GEO. A. HORMEL & CO., Austin, Minn.

### FOR SALE

#### Brand New Westinghouse Motor Generator Set

200 HP., 3 phase, 60 cycle, 220 volt synchronous motor, direct connected to a 124.5 KW., 100% power factor, 120 volt, 60 cycle, single phase generator.

HYGRADE SYLVANIA CORP.  
60 Boston St., Salem, Mass.

#### Gregory Hi-Grade Rebuilt Motor & Machinery Bargains

Are Welders; Air Compressors; Pumps, M-G Sets; etc. Fine lot of

OIL COOLED TRANSFORMERS			
2200 v. pri.		110/220 v. sec.	
KVA	Make	KVA	Make
5	Gen. Elec.	5	Gen. Elec.
5	Westghse	5	Westghse
20	Moloney	20	Moloney
25	Gen. Elec.	25	Gen. Elec.
25	Westghse	25	Westghse
25	Moloney	25	Moloney
30	Gen. Elec.	30	Gen. Elec.

GREGORY ELECTRIC CO.  
1600 So. Lincoln St. Chicago

### Sold-Serviced-Exchanged

#### GENERATORS

50 KW 575/480/240 V G E Skinner Unit  
125 KW 480 V Western Electric Generator  
200 KW 480 V Westinghouse Skinner Unit

#### ALTERNATING CURRENT MOTORS

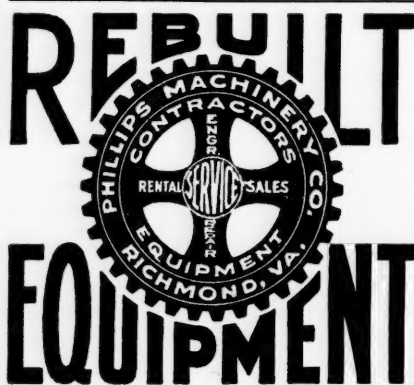
50 HP 550 V 600 RPM General Electric  
75 HP 550 V 720 RPM General Electric  
100 HP 2200 V 720 RPM General Electric  
125 HP 440 V 1200 RPM General Electric  
150 HP 2200 V 720 RPM General Electric

#### TRANSFORMERS

4 10 KVA 2200/460/330 V Westinghouse  
3 75 KVA 2300/480 V Westinghouse  
3 100 KVA 2300/220/110 V Westinghouse

We will buy several lots of 3 phase A.C. motors up to 15 H.P.

ELECTRICAL EQUIPMENT CO., INC.  
Richmond, Va. Raleigh, N. C.



#### MOTORS

3 PH. 60 Cy.  
HP. TYPE SPEED  
600 G.E. SI. Rg. 720  
600 G.E. SI. Rg. 720  
600 G.E. Synch. 257  
400 WEST. SI. Rg. 505  
400 G.E. SI. Rg. 885  
300 G.E. SI. Rg. 575  
300 AL. CH. SI. Rg. 585  
2-200 WEST. SI. Rg. 900  
200 G.E. SI. Rg. 900  
150 G.E. SI. Rg. 870  
150 G.E. SI. Rg. 1750  
100 G.E. SI. Rg. 700  
100 AL. CH. SI. Rg. 695  
100 WEST. SI. Rg. 1160  
90 G.E. SI. Rg. 720  
75 G.E. SI. Rg. 1200

#### ENGINE GENER.

1-400 KVA. CR. WH.  
240 V. 3 Ph., 60 Cy.,  
120 R.P.M. to Hamil-  
ton Corliss Engine.

#### MOTOR GENER.

1-1000 K.W. G.E. MPC  
275 V. D.C. Gen.  
Conn. to 1440 H.P.  
G.E. ATI 4600/2300  
V. 514 R.P.M. 3 Ph.  
60 Cy.  
1-300 K.W. WEST. 600  
V. D.C. Gen. Conn.  
to 433 H.P. Sync.  
motor 4600/2300 V.  
3 Ph. 60 cy. 1200  
R.P.M.

Above are few of our stock items

BELYEA CO., INC. 155 W. 18TH ST., NEW YORK CITY

### FOR SALE

135 H.P. Philadelphia Gear Reducer.  
24", 36", 45" lifting magnets.  
200, 300, 600 amp. arc welders.  
100 H.P. G.E. slip ring motor.  
200 H.P. Allis Chalmers slip ring motor.  
25 H.P. G.E. type C D motor, 250 V D. C.  
75 H.P. C.W. D. C. motor.

GOODMAN ELECTRIC MACHINERY CO.  
1060 Broad Street Newark, N. J.

### Engine Sets (A.C.)

KVA	Generator	Engine	Location
175 (2)	G.E.	Ames Uniflow	N. Y.
175	G.E.	Harrisburg 4 v.	Fia.
180	G.E.	Chuse Uniflow	Miss.
250	G.E.	Skinner Uniflow	N. Y.
250	G.E.	Harrisburg 4 v.	Fia.
312 (2)	G.E.	Skinner Uniflow	Ohio
350	Wghse.	Hamilton Corliss	N. Y.
625	G.E.	Ames Uniflow	N. Y.
750	G.E.	Ames Uniflow	N. Y.

Boilers: (3)—300 H.P. Babcock & Wilcox 200 lbs.—N. Y.

Condenser: 2000 sq. ft. Worthington Surface Condenser—Pa.

Power Plant Equipment Co., Inc.  
39 Cortlandt Street, New York, N. Y.

### REBUILT Electrical Equipment

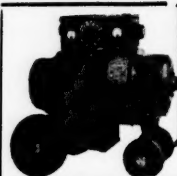
Stock List furnished upon request  
1-400 HP. Westinghouse Slip Ring Motor, 3 phase, 2300 or 4100 volt, Type CW, 514 RPM.  
No. 75 Sturtevant Blower, 8000 c.f.m. 2.6 w.g.  
No. 80 Sturtevant Blower 21,000 c.f.m. 2.6 w.g.  
165 KVA Wghse. sync. motor or alternator.  
ELECTRIC APPARATUS REPAIR CO.  
1410 N. 6th St., Philadelphia, Pa.

### TURBO GENERATOR

500 K.W. General Electric Turbo Generator Set, 440 volt, 3 phase, 60 cycle, 80% P.F., Curtis steam turbine, 150 pounds steam pressure, 3600 R.P.M., steam driven exciter, Wheeler surface condenser.

W. I. DENNY

618 West Lake Street, Chicago, Ill.



WRITE FOR  
ARC Welder Bargain List  
The new 40 Volt type—Electric Drive, Gasoline Engine and "Build Your Own" Generators — all at tremendous savings.  
RENT — NEW — USED  
Write for catalog  
Hobart Bros. Co.,  
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### SEND FOR CATALOG

120 HP Fairbanks Morse Diesel Engines.  
100, 200, 500, 2000 KW Diesel Plants.  
200 KW 2300 v. Turbo, 200 lb. steam, 17 lb. B.P.  
400 KW Skinner Universal Uniflow, A.C.  
60 HP Amer. 3 Drum & Swinger Gaso. Holst.  
Mississippi Valley Equipment Co.  
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Compressors—Cranes—Buckets—Tanks  
Rail—Steel Sheet Piling—Pipe

### NEW YORK CITY'S LARGEST STOCK ELECTRICAL EQUIPMENT

Wire, write or phone your requirements. We have it in stock.

Full One Year Guarantee

L. J. LAND

Established 1910

139 Grand Street, New York, N. Y.

### WE BUY AND SELL

Power Plants, D.C. and A.C. Motors, Generators, Transformers, Pumps and Elec. Instruments. Give us the opportunity of bidding. NOTE: We carry a diversified stock, and your inquiries will receive immediate attention. Satisfaction guaranteed.

Superior Electric Machinery Co.  
253 North Third Street, Philadelphia, Pa.

**Guaranteed**

**ADJUSTABLE SPEED MOTORS**

Modern type, standard make machines with every form of speed control to meet your power drive problem. Completely overhauled, tested, guaranteed. The Motor Repair

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### SALES AND REPAIR SERVICE

3-667 KVA Gen. Electric Transformers, \$1000.00  
60 cycle, 11500-460 volts. EACH.

We carry a complete stock. Write for Catalog No. 130-B

All transformers guaranteed for one year.

WANTED: Transformers, burned-out or in operating condition.

THE ELECTRIC SERVICE COMPANY, Inc.

"America's Used Transformer Clearing House"

Station M. Cincinnati, Ohio





## COMPLETE FABRICATING PLANT

We have just purchased a complete Structural Shop and have many machines available. A few of these are listed below:

### PUNCHES AND SHEARS

Pels combination cap. 6x6 1/2" angles.  
24" Cleveland beam punch, cap. 2-1" x 1".  
No. 3 H & J double end, 26" throat, cap. 1 1/2 x 1-1/8".  
48" Long & Alstatter single end, cap. 1 1/2 x 1.  
24" Southwark cap. 3/4 x 3/4, arch jaw.

### MISCELLANEOUS

12"x10" Ingersoll-Rand, ERI air comp., 369 cu. ft.  
1 1/2" cap. McCabe flanging machine.  
2-280 amp. Westinghouse portable arc welders  
220/3/60  
40 KVA American spot welder, 45" throat.

55 KVA American spot welder, 27" throat.  
65 KW Federal portable spot welder.  
2-15 KW Federal spot welders, 24" throat.  
6"x6"x1/2" Long & Alstatter double angle shear.  
24" Newton column facer.  
2" Landis pipe machine, motor drive.  
3-Electrode electric rivet heaters.  
4" Morris radial drill.  
20"-24"-32" upright drills, belt drive.  
100 lb. Kane & Roach belt driven hammer.  
44" Niles bending roll, drop end, 7" and 6 3/4" rolls, belt driven.  
200' of 18" roller conveyor, ball bearing.

MANY OTHER MACHINES, WHAT DO YOU NEED?

## THE O'BRIEN MACHINERY CO.

113 N. THIRD ST.

PHILADELPHIA, PA.

## AIR COMPRESSOR

Sullivan tandem compound Air Compressor, steam driven, 2000 feet per minute, 100 pounds pressure. With complete equipment. Excellent condition.

W. I. DENNY

618 West Lake St., Chicago, Ill.

## AIR COMPRESSORS

All makes and sizes

Remanufactured — 1 year guarantee.  
35 years' experience.

AMERICAN AIR COMPRESSOR CORP.  
Remanufacturing Division  
556 Hamilton Ave., Brooklyn, N. Y.

## FOR SALE Switching Engine

60 ton Baldwin Std. Gauge, Class 060, six wheel with tender. 120 ton 60 lb. rail and 100 ton 80 lb. rail. (Located near Tennessee in Southern Ky.). Bargain for quick sale. Immediate shipment.

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Phone: Barren Fork, Ky.—0421  
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## 100 lb. T Rails

Other weights, 12 to 100 lbs. per yard. Frogs, Switches, Tie Plates. All kinds of Track Supplies. DEPENDABLE SERVICE.

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7 Dey Street, New York, N. Y.  
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## RAILS NEW & RELAYING ALL WEIGHTS

Let us know your needs. We may have material in stock near you.

WE BUY RAILS FIT TO RE-LAY

ROBINSON & ORR

Columbia Bldg., 248 Fourth Ave., Pittsburgh, Pa.  
New Frogs and Switches at low prices

## FOR SALE: Following used machinery

1-72" x 18" Boiler, stack, dutch oven setting.  
1-12" x 13" Fleming Engine with 75 k. w. direct connected Generator.  
1-54" Band Resaw.  
1-8 x 30 Fay & Egan Double Surfacar.  
1-Shaving Cyclone.  
1-Correl Band Saw Sharpener for 6" Saws.  
2-60" x 16" Tubular Boilers and fronts (Memphis, Tenn.)  
1-Circle Saw Grinder.  
H. H. ALEXANDER, Belzoni, Miss.

## DIESEL ENGINE

FOR SALE BARGAIN

One stationary Fairbanks-Morse 3 cylinder, 180 H.P.  
One 45-55 H.P. Kalenberg 3 cylinder marine engine with many spare parts.

For particulars, write

ATKINSON DREDGING CO.,  
(Great Bridge) Norfolk, Va.

## E. C. A. Rebuilt Equipment

FOR SALE OR RENT

Air Compressors	Derricks
Bins & Batches	Holsts
Boilers	Locomotives
Buckets	Mixers
Cranes	Pavers
Conveyors	Pumps
Crushers	Rollers
Draglines	Track
Graders	Tractors

Send for complete stock list.

## Equipment Corp. of America

CHICAGO  
1166 S. Washtenaw Ave. Phone Nevada 2400  
PHILADELPHIA PITTSBURGH  
P.O. Box 5419 Kingsessing F.O. Box 633  
Sta. Phone Granite 7600 Phone Federal 2000.

**NEW-USED RECLAIMED FROM 1/8" to 72"**  
**ALBERT PIPE SUPPLY CO. Inc.**  
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## PIPE

Reconditioned pipe, new threads and couplings, all sizes. 3/4 in. to 36 in., guaranteed suitable for all practical purposes.

MARINE METAL & SUPPLY CO.  
167 South Street, New York City

## IRON AND STEEL PIPE

Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.  
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## NEW AND USED

## PIPE

NEW THREADS AND COUPLINGS  
GREENPOINT IRON & PIPE CO. Inc.

187-207 Maspeth Ave., Brooklyn, N. Y.

## ALBERT & DAVIDSON PIPE CORP.

**NEW-USED-UNTESTED**  
2nd Ave. 50th-51st St. EST. 1904 Brooklyn, N.Y.

## GOOD USED EQUIPMENT

### SELECTED SPECIAL ITEMS

5-60" BRAND NEW Tolhurst bronze basket, direct motor driven Centrifugal Extractors.

1-42 truck Hurricane Dryer, complete.

14-W. & P. Mixers, size 30, type X, jacketed, 2650 gallons each.

2-W. & P. Jacketed Mixers, size 15, heatable sigma blades.

2-700 gal. Duriron Kettles, jack.

1-70 H.P. UNUSED Coatesville Boiler.

1-200 H.P. B. & W. ASME Boiler, 200#.

1-Triple Effect Swenson Aluminum Evaporator, 250 sq. ft. per effect.

3-Proctor & Schwartz Automatic Cotton Stock Dryers, conveyor, type.

1-8'8"x85' Ruggles-Coles class 'A' double shell, direct heat Rotary Dryer.

1-Devine 5'x33' Rotary Vacuum Dryer.

1-Lummus 500 gal. jacketed Copper Vacuum Pan.

1-U.S. No. 3 Rotary Smelting Furnace.

1-Badger 24" Copper Rectifying Column, complete.

8-Raymond Pulverizers, No. 0000 to No. 3; 3-roll High Side Mill.

8-Hardinge Conical Ball Mills, 4 1/2 x 16, 5x22, 6x22, 7x36, 7x48, 8x30".

Latest "Consolidated News" just printed. Send for copy, listing complete stock of machinery for the Chemical and Allied Industries.

## Consolidated Products Company, Inc.

16-21 Park Row, New York, N. Y.

## FOR SALE

Jaw Crushers—2" x 6" up to 66" x 84".  
Crushing Rolls—12" x 12" up to 54" x 64".  
Gyratory Crushers—No. 2 up to No. 12.  
Swing Hammer Mills—Symonds Cone and Disc Crushers.  
Rotary-fine or Pot Crushers—No. 00, No. 1, No. 1 1/2, and No. 2.  
Rotary Dryers—3 1/2' x 25', 4' x 30', 5' x 30', 5 1/2' x 40', 6' x 50', 7' x 50', 8 1/2' x 75'.  
Cement Kilns—3' x 25' up to 8' x 125'.  
Hardinge, Marcy, Fuller-Lehigh, and Kent Mills.  
Raymond Mills—5 roll, No. 1, No. 0 and No. 00.  
Tube, Rod and Ball Mills—3 1/2' x 8' up to 6' x 22'.  
Rotary Filters—3' x 2', 6' x 6', 6' x 8', and 12' x 12'.  
Dorr Classifiers and Thickeners.  
Complete Asphalt Drying and Mixing Plants.  
3-8' x 72" Hardinge Mills.  
New Dryers built for all purposes.

W. P. HEINEKEN,

95 Liberty St., New York

## FOR SALE

### CARS

36-12 yd. Western Air or Hand Dump Cars  
12-41 ft. 50 ton Steel Flat Cars  
16-40 ft. 50 ton Steel Gondolas  
60-36 ft. 40 ton Wood Gondolas  
80-50 ton Steel Hopper Coal Cars

### EQUIPMENT

Locomotives, Cranes, Steel Sheet Piling, Refrigerator Cars, Tank Cars.

### RAILS

New and Relay Rail, all weights, C/L or tonnage Lots.

## HYMAN-MICHAELS CO.

20 N. Wacker Dr. Bldg.

Chicago

Railway Ex. Bldg. St. Louis, Mo. 101 West 31st St. New York.

## FOR SALE

Thew Shovel with 3/4 yd. Bottom Dump Bucket Gasoline Driven.

48" x 48" x 12 ft. Cincinnati Planer 4 Heads.

Two, Kent Phosphate Rock Mills, 36".

Two, Side Dump Steel Cars 36" Gauge 2 yd. Cap.

Burton Machine Co., Norfolk, Va.

## STRUCTURAL STEEL

## PIPE FITTINGS

## NEW & USED

## MARYLAND PIPE & STEEL CORP.

## PIPE

OSTEND & SCOTT STS., BALTIMORE, MD.

## VALVES

## BARGAINS IN HIGH GRADE REBUILT EQUIPMENT

MOTORS 220/440 V 60 Cy. 3 Ph.			
1-250	C. Wheeler	Sq. Cage	1800
1-200	G.E.	Sq. Cage	1800
1-150	G.E.	Sq. Cage	1800
1-150	WEM CS	Sq. Cage	1200
1-100	WEM CS	Sq. Cage	1800
1-100	WEM CS	Sq. Cage	1200
1-75	Allis		1800
2-75	G.E. K.T.		1200
1-60	G.E. K.T.		1800
1-50	G.E. K.T.		1800
2-50	WEM CS		1800
6-50	G.E. K.T.		900
1-50	G.E. K.T.		1200
2-40	WEM CS		1800
3-40	G.E. K.T.		680
4-40	G.E.		600
1-75	WEM CS		900

Also, about 1000 other ratings, from 1/4 H.P. up.

2-Ridgeway Synchronous MG sets, 150 KW, 275 V, DC 2300/60/3 AC with AC and DC panels.

The above is only a partial list of equipment on hand. We have a large stock of transformers in various voltages—other M. G. Sets—Pumps Industrial and Mine Hoists—Locomotives—Air Compressors, etc.

All equipment thoroughly rebuilt in our own Shop and guaranteed.

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2-75	G.E. M.T.	slip ring	600
3-50	G.E. M.T.	slip ring	600
1-50	G.E. M.T.	slip ring	900
1-75	G.E. M.T.	slip ring	900
1-125	Allis	slip ring	435

220/440 60 Cy. 3 Ph.			
1-200	WEM CW		500
2-250	WEM CW		680
1-150	WEM CW		585

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2-813 H.P. Edgemoor Boilers, 300 lb. pressure, complete plant.  
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1-125 KVA Ames Uniflow engine.  
1-180 KW Chuse Uniflow Engine-Generator Set.  
1-300 KW Chuse Uniflow Engine-Generator Set.  
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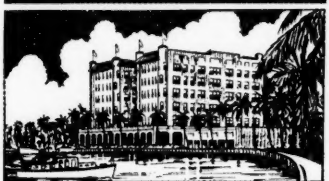


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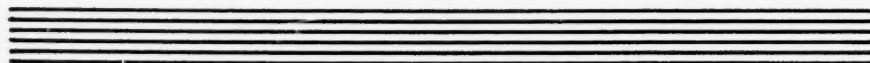


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Using a typical example, this is the way in which to compute the cost when water is purchased:

Water Rate=\$1.10 per 1,000 cu. ft.  
Consumption=1,200 cu. ft. per hour.  
Water cost per hour= $\frac{1200 \times \$1.10}{1000} = \$1.32$

Water cost per 10-hour working day =  
 $\$1.32 \times 10 = \$13.20$   
Water cost per 5½-day week =  
 $\$13.20 \times 5\frac{1}{2} = \$72.60$   
Water cost per year =  
 $\$72.60 \times 52 = \$3,775.20$   
Now compare that with the following computation of cost of pumping from a private well with privately owned pump:

150 g.p.m. against 50-lb. discharge pressure above ground from 100 ft. well with 30 ft. draw-down. Consumption of 150 g.p.m.= 1,200 cu. ft. per hr. Electric power used:  
 $150 \text{ g.p.m.} \times (50\text{-lb.} \times 2.31 + 30 \text{ ft.})$   
 $= 3960 \times 58\frac{1}{2}\%$   
 $= 9.42 \text{ e. hp.}$   
 $9.42 \text{ e. hp.} \times .746 = 7.027 \text{ kw. with electric}$   
 $58\frac{1}{2}\% = \text{wire-to-water efficiency}$   
rate of 2½¢ per kw.-hour  
Electric power cost per hour =  
 $7.027 \text{ kw.} \times \$0.025 = \$0.1756$   
Electric cost per 10-hour day =  
 $\$0.1756 \times 10 = \$1.756$   
Electric cost per 5½-day week =  
 $\$1.756 \times 5\frac{1}{2} = \$9.662$   
Electric cost per year =  
 $\$9.662 \times 52 = \$502.45$   
Initial price of well with pump and motor ready to run @ \$40. per gal. =  
 $\$40. \times 150 \text{ g.p.m.} = \$6,000$   
Interest on investment @ 5% = \$300.00  
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Electric power cost per year = .. \$502.45  
\$122.45

The saving in this instance would therefore amount to (\$3775.20 — \$1222.45) \$2552.75, or a reduction of 67.5 per cent.

**Ingersoll-Rand Literature.** — Ingersoll-Rand Company, Phillipsburg, N. J., and 11 Broadway, New York, has issued Bulletin No. 2214, devoted to water-vapor refrigeration for cooling gas, and Bulletin No. 3162 describing and illustrating the Ingersoll-Rand line of power-driven, horizontal duplex, double-acting, heavy-duty compressors, all types equipped with I-R Channel Valve.

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familiar with Southern economic history and development. Please write stating qualifications.

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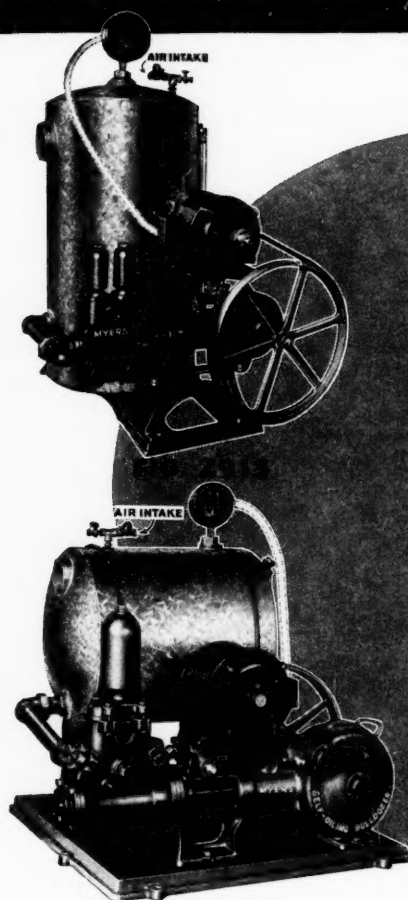
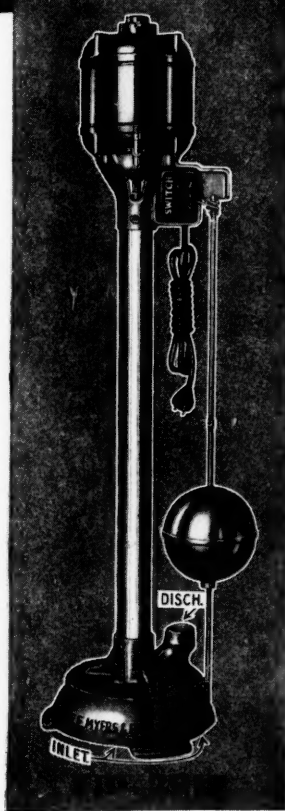


FIG. 2915

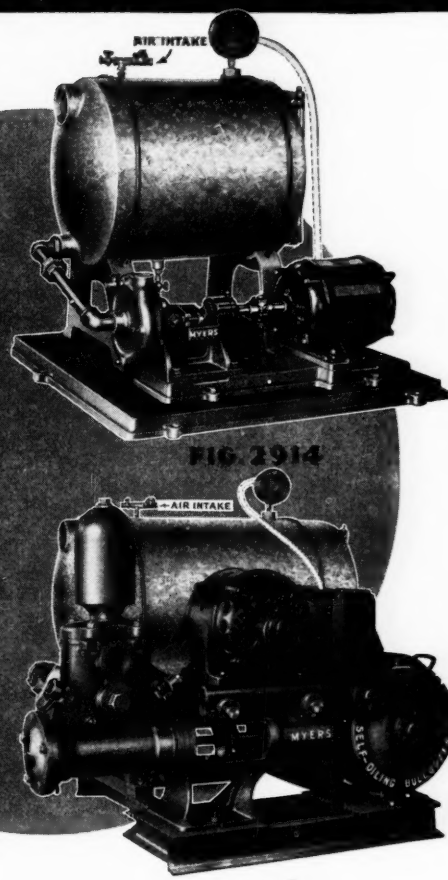


FIG. 2916

Long before the appearance of this advertisement Myers engineers have devoted many months to the development of the new Myers Sump Pumps and Condensate Units which are announced for the first time on this page.

Like all other Myers Pumps and Water Systems they have been built to Myers Quality Standards for more years of better service. While limited space does not permit of detailed information being given, the illustrations picture clearly modern styling with many improved features that will quickly create a profitable demand for this new Myers Line.

If you are interested in Condensate Units, Sump Pumps, Centrifugal Pumps, Self-Oiling Power Pumps, Automatic Hand or Power Water Systems, Single or Double Acting Cylinders, or in Hand or Power Pumping Equipment for other purposes, write our Engineering Department for detailed information and a copy of our new catalog No. P68, just published. Your inquiry will receive prompt attention.

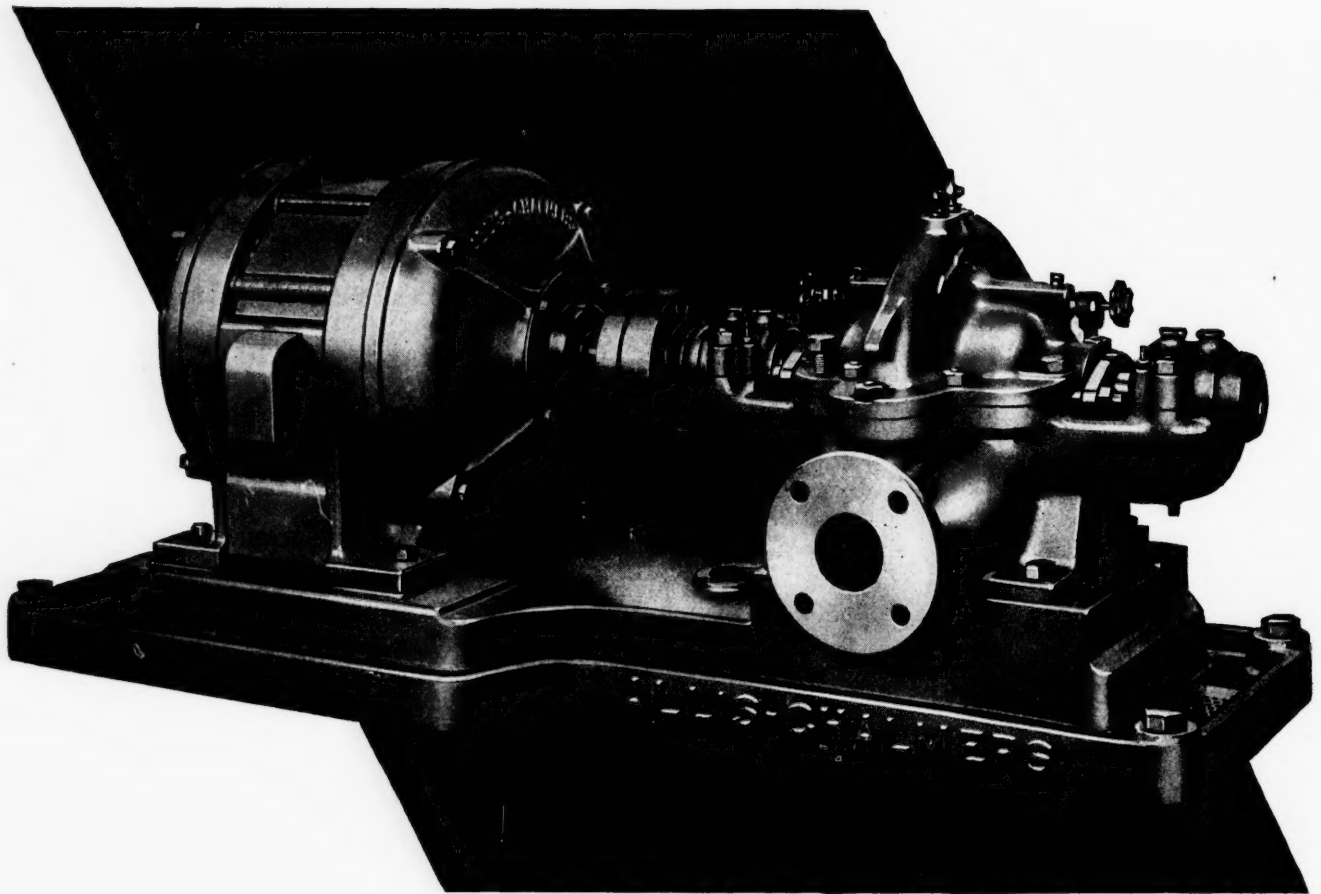
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WATER think  
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